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Content Management System For Conference Paper Handling

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DECLARATION STATEMENT

I certify that the work submitted is my own and that any material derived or quoted from the published or unpublished work of other persons has been duly acknowledged (ref. UPR AS/C/6.1, Appendix I, Section 2 – Section on cheating and plagiarism)

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ABSTRACT

The Content Management System within this project is a web application which is used to offer functionality required for the design of paper handling aspects of international conference websites.

Microsoft Visual Studio 2005 is the integrated development environment and the main tool used to develop this system. The completed project is dedicated to the easy and affordable management of all aspects of the process of organizing conference papers such as uploading research papers and reviewers' facilities for accessing papers as well as uploading comments. This report explores in detail the development stages of this particular content management system from initial literature research to the final evaluation progress.

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I would also like to thank Johann Siau for all the technical assistance that he has given to me for completing this project effectively.

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GLOSSARY

ASP.NET the latest version of Microsoft's Active Server Page Technology

CMS Content Management System

DBMS Database Management System

IIS Internet Information Services

ODBC Open Database Connectivity

SDLC System Development Life Cycle

SQL Structured Query Language

VB.NET Visual Basic.NET

VS Visual Studio

XML Extensible Markup Language

1. Introduction

1.1 Background Information

A Content Management System (CMS) is a software system used for content management. The content management systems are deployed primarily for interactive use by a potentially large number of contributors. As for this project, the particular CMS is mainly for conference paper handling aspect, it's designed to offer extensive support throughout all phases of submission and review process for the International conference papers.

The completed application is dedicated to the easy and affordable management of all aspects of the process of organizing conference papers. It will enable a user to access the system with ease by its ease of navigation and allow such interactive operations as uploading research papers and reviewers' facilities for accessing papers and uploading comments. Its key features are a comfortable management of participants, support for any kind of contribution and configurable review forms.

1.2 Project Aims and Objectives

An aim of a project is a general statement of the goal. It tries to summarize the activity which is about to take place in broad terms. Once the aims are established, it is important to break them down into small and achievable parts, which are called objectives. The aims and objectives of the project are stated as follows.

1.2.1 Project Aims

The main aim of this project is to develop a content management system offering the functionality required for the design of paper handling aspects of international conference websites.

1.2.2 Project Objectives

The main objectives of the project are as follows:

- Create a user friendly interface to enable the user to access the system with ease .
- Incorporate a login page within the system for security reason.
- Allow registered authors to do such operations as uploading research papers, assigning papers to reviewers and paper status tracking.
- Allow registered reviewers to access the research papers uploaded by the authors and give comments on the papers .
- Create a secure database to hold the large amount of information.
- Apply programming language to update, retrieve and delete the data from the database.

1.3 Plan of Work

The key to a successful project is in the planning. As the aims and objectives are established in the above, the project work breakdown structure needs to be identified. Also, a detailed project planning schedule corresponding to the breakdown work needs to be created. Therefore the entire project is divided into five stages. That is, system analysis stage, system design stage, system implementation stage, system testing stage as well as report writing stage.

The activities involved in the system analysis stage is to have a deep understanding about content management system (CMS) and then gather the requirements of this particular CMS for conference paper handling. As part of this work, research is conducted into the paper handling characteristics expected for international conference websites. For this reason, a series of conference websites such as ICASSP 2007, Interspeech and IEEE Odyssey are visited

The system design stage involves lay out the user interface and construct the database related to the project. This stage is the translation of the requirements and information gathered in previous stage of what needs to be accomplished into how it will be accomplished.

The system implementation phase is where the system becomes real. For a CMS solution this means not only configuring the software to meet the specifications outlined in the previous stage, but also following a traditional software development process of coding, and testing navigation and browser. Both these items are then put through system testing stage.

Based on the analysis of various working stages as described above, a detailed project planning schedule, or in other words, time management is drawn up using Gantt chart method. Time management is a subset of project management that includes the processes required to ensure timely completion of the project. The Gantt Chart is shown in the Appendix A.

1.4 Outline of the Report

Since this project is aimed to develop a content management system for conference paper handling, the outline of this report is based on a typical system development process. This report consists of five chapters in total:

Chapter 1 is about the introduction to the project. It gives the necessary background information with regard to this project, such as description of project aims and objectives, initial plan of work as well as the main structure of this report.

Chapter 2 covers the review of literature research conducted relating to the project. First it discusses the general understanding about content management system, and then introduces a project management technique (the waterfall model), a powerful web technology (ASP.NET), a programming language (Visual Basic.NET), as well as the main integrated development environment (Visual Studio 2005) used to develop this system in detail.

Chapter 3 illustrates the system design and implementation processes thoroughly with explanations of necessary terminology. This chapter is the most important part within the whole report. It describes clearly and exactly how the user interface and database is designed; and how the design becomes real afterwards.

Chapter 4 is about testing carried out on the developed project to evaluate its compliance with specific requirements. Testing methodology with related testing results are explained in this chapter. And at last, the report ends with Chapter 5 which makes the conclusion and future developments.

2. Literature Research

An investigation was carried out to have a general idear about what is CMS. After that, a project management technique, a powerful web technology as well as the main integrated development environment used to develop this content management system are introduced here one by one in detail.

2.1 Understanding Content Management System

2.1.1 Introduction of CMS

The phrase "Content Management System" means different things to different people. To fully understand what it is a Content Management System (CMS), the word “content” needs to be defined at first.

Basically, content is all the information and functionality that has been organized toward some particular use. [1] Hence content management is the effective management of those information and functionality. The system itself can be defined as a tool that facilitates the efficient and effective production of the desired 'output' using the managed content. To combine all these three definitions, the content management system can be defined as a tool for managing content, usually on a Web site, that separates the design, interactivity, and content from one another to make it easier for content authors to provide content. [2]

A CMS is now the preferred choice for those who need easy content changes and simplified control of large amounts of content; and above all, the ability to do a lot more, a lot easier, and a lot faster than with any other system. [3]

2.1.2 Types of CMS

In the CMS world, there are many different types of products with different styles each. Elements of various CMS styles can even be mixed and matched. Several main types of CMS are as follows:

- Web Content Management Systems (WCMS): This subset of CMS focuses managing only Web content. Products vary in functionality, complexity, and range.
- Enterprise Content Management Systems (ECMS): ECMS emphasize comprehensiveness. They are used to manage all aspects of an organization's content publication processes, including Web, print, and any alternative outputs. The products offer a good amount of functionality, complexity, and range.

- Document Management Systems (DMS): Technically, these are parallel to CMS, but they focus on documents (such as Microsoft Word files), and are more for internal use than for presenting content for public consumption. They vary broadly in functionality, complexity, and range.
- Digital Rights Management Systems (DRMS): These are also parallel or complementary to CMS. These systems only manage intellectual property rights information for any content that exists. They vary broadly in functionality, complexity, and range, but tend to specialize in areas where Digital Rights are a priority (such as music or video).
- Asset Management Systems (AMS): These are also parallel to CMS. These systems manage so-called content "assets" (images, video, audio, and other binary, non-textual content). They vary broadly in functionality, complexity, and range, but tend to be used in organizations where assets like these are numerous (such as photo agencies or graphic design firms).[4]

As mentioned in the beginning, the main aim of this project is to develop a CMS offering the functionality required for the design of paper handling aspects of international conference websites，so this project can be regarded as a Web Content Management System.

2.2 System Development Life Cycle Model Overview

The system development life cycle (SDLC) is a project management technique that divides complex project into smaller, more easily managed stages from an initial feasibility study through maintenance of the completed application. Various SDLC methodologies have been developed to guide the processes involved. The waterfall model is a classic SDLC model (**Figure 1**) and it is the most widely used paradigm.

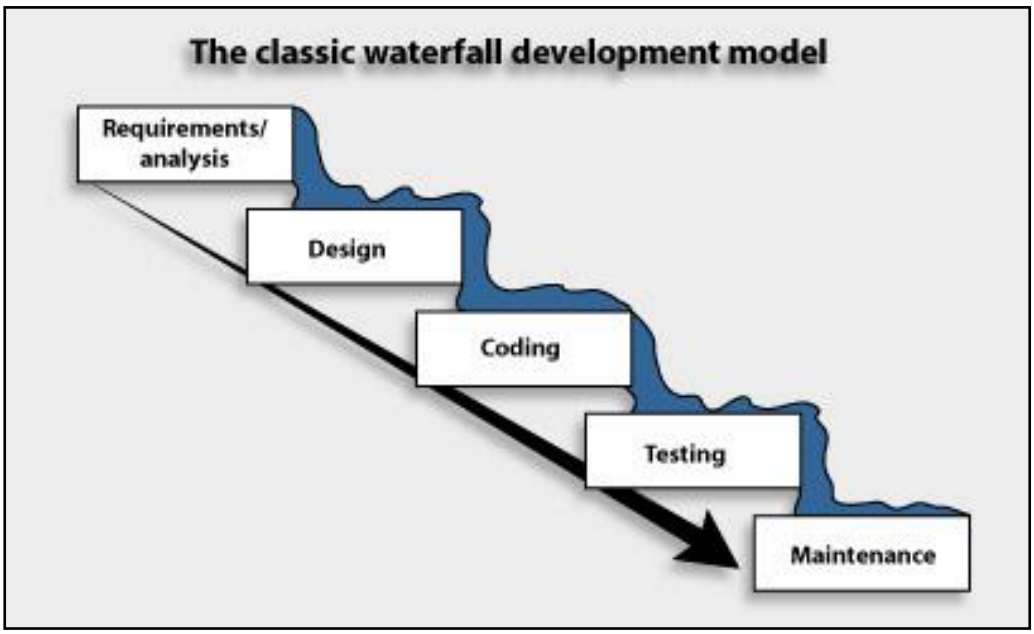

Figure 1 the Classic Waterfall Model [6]

The waterfall model regards software developments as a set of phases or stages that a developer goes down in a cascading way, just like water going down a waterfall. That's why it is called this name. In the waterfall model, the developers start at the first phase, and move on to the next one as soon as the current phase is complete. [5]

- Requirements/ Analysis: This first step involves gathering information about what the customers need and defining the problem that the output is expected to solve. Analysis mainly includes understanding the functionalities the product must perform and the results of the analysis are typically captured in a formal requirements specification, which serves as an input to the next step.
- Design: Based on the requirements specification outlined in the preceding step, the design step involves defining the hardware and software architecture, specifying performance and security parameters, choosing programming language and so on. The output of this stage is one or more design specifications, which are used in the next stage of implementation.
- Coding/Implementation: The developers in this step build the actual application using the predefined design specification. This step is normally performed by a development team consisting of programmers, interface designers and other specialists. The output of this step is one or more product components which are built to satisfy the functionalities required for the system.
- Testing: Once the application is complete, it goes to the testing stage. The application is tested to make sure that it meets all the requirements and is error-free. Once the application has passed the testing process, it can be released. This is also the stage at which product documentation, such as a user manual is prepared, reviewed and published.
- Maintenance: This step involves making modifications to the system to improve performance or to meet new users' needs. These modifications arise either due to change requests initiated by the customer, or defects uncovered during live use of the system. Typically, every change made to the product during the maintenance cycle is recorded and a new product release is performed to enable the customer to gain the benefit of the update.[7]

The waterfall model, as described above, describes a development method that is linear and sequential. It mainly offers the following advantages. First, it has distinct goals for each stage of development. Development moves from concept, through design, implementation, testing and ends up at operation and maintenance. Each phase of development proceeds in strict order, without any overlapping. The emphasis on requirements and design before writing every single source code ensures minimal wastage of effort and reduces the risk of customer expectations not being met. In addition, getting the requirements and design out of the way

first also improves quality; it's much easier to catch and correct possible flaws at the design stage than at the testing stage. Finally, because the first two steps respectively end up with the production of a formal specification, the waterfall model can aid efficient knowledge transfer when team members are dispersed in different locations. Hence the CMS involved in this project is developed base on this system development life cycle theory.

2.3 Web Application Framework ASP.NET

ASP.NET is the latest version of Microsoft's Active Server Pages technology (ASP). It is a part of the Microsoft .NET framework, and a powerful tool for creating dynamic and interactive web pages. [8]

To run ASP.NET, a computer capable of running Windows is needed. The Internet Information Services (IIS) from the Add/Remove Windows components dialog needs to be installed because ASP.NET is a program that runs inside IIS. Internet Information Services (IIS) is a set of Internet-based services for servers using Microsoft Windows.When a browser requests an ASP.NET file; IIS passes the request to the ASP.NET engine on the server. The ASP.NET engine reads the file, line by line, and executes the scripts in the file. And finally, the ASP.NET file is returned to the browser as plain HTML.

2.3.1 How does ASP.NET work

ASP.NET is a server-side technology which means that it runs on the web server. When a web browser requests a web page created with only client-side technologies like HTML, the web server simply grabs the files that the browser (or client) requests and sends them down the line. The client is entirely responsible for reading the markup in those files and interpreting that markup to display the page on the screen.

Server-side technologies, like ASP.NET, are different. Instead of being interpreted by the client, server-side code is interpreted by the web server. In the case of ASP.NET, the code in the page is read by the server and used to generate HTML that is then sent to the browser. Since the processing of the ASP.NET code occurs on the server, it's called a server-side technology. As **Figure 2** shows, the client only sees the HTML. The server is entirely responsible for processing the server-side code.

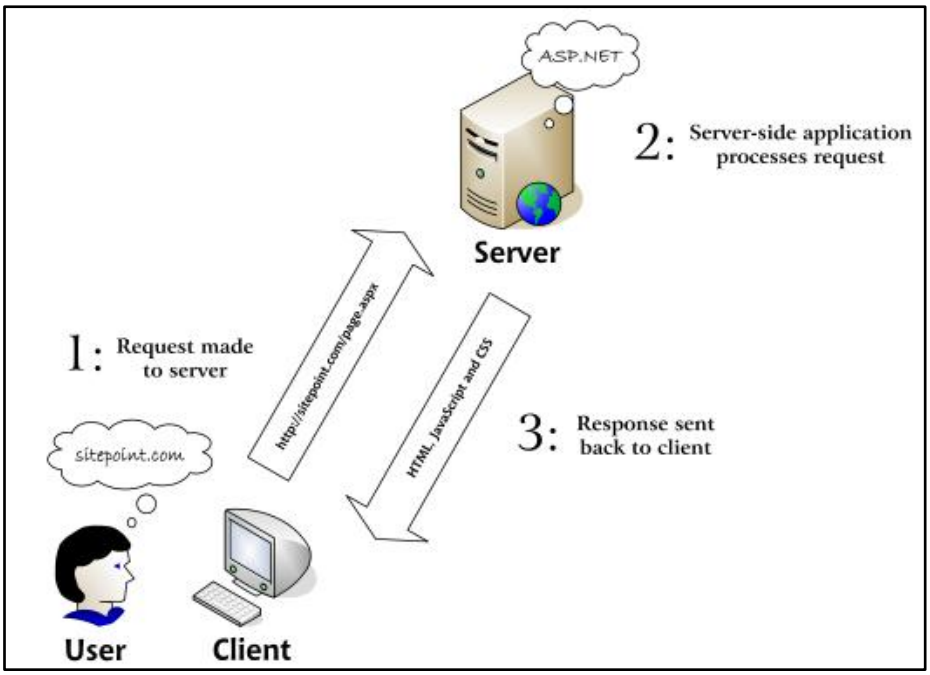

Figure 2 A user interacting with a web application [9]

2.3.2 What is an ASP.NET File

ASP.NET pages are simply text files that have the .aspx file name extension, and can be placed on any web server equipped with ASP.NET. An ASP.NET page consists of the following elements [10]:

- ✓ directives
- ✓ code declaration blocks
- ✓ code render blocks
- ✓ ASP.NET server controls
- ✓ server-side comments
- ✓ literal text and HTML tags

Figure 3 illustrates the various parts of a simple ASP.NET page.

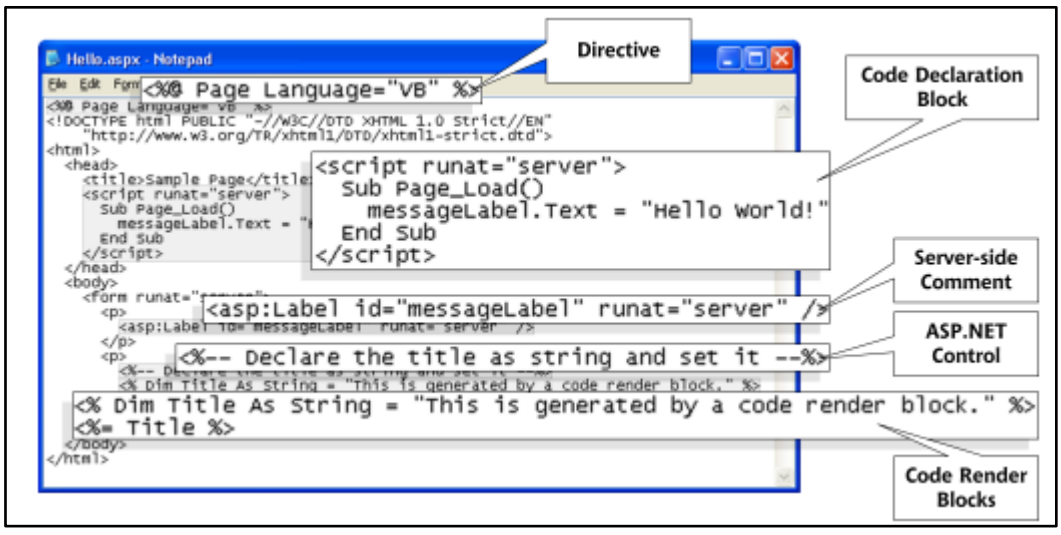

Figure 3 The parts of an ASP.NET page [9]

ASP.NET has a few features that really are unique:

- ASP.NET pages are compiled, not interpreted. In ASP.NET's predecessor, ASP, pages were interpreted: every time a user requested a page, the server would read the page's code into memory, figure out how to execute the code (that is, interpret the code), and execute it. In ASP.NET, the server need only figure out how to execute the code once. The code is compiled into efficient binary files, which can be run very quickly, again and again, without the overhead involved in re-reading the page each time. This represents a big jump in performance from the old days of ASP.
- ASP.NET has full access to the functionality of the .NET Framework. Support for XML (Extensible Markup Language), web services, database interaction, email, regular expressions, and many other technologies are built right into .NET, which saves you from having to reinvent the wheel.
- ASP.NET allows you to separate the server-side code in your pages from the HTML layout.
- ASP.NET makes it easy to reuse common User Interface elements in many web forms, as it allows us to save those components as independent web user controls.[10]

2.4 Visual Studio 2005

Visual Studio is the main Integrated Development Environment from Microsoft. From its first .NET version released in 2002 till now, the biggest change in Visual Studio was a single integrated development environment for all .NET languages. Microsoft removed the ".NET" moniker from Visual Studio 2005, but it still primarily targets the .NET Framework, which was upgraded to version 2.0. **Figure 4** is Selelcting a ASP.NET Web Application in Visual Studio 2005.

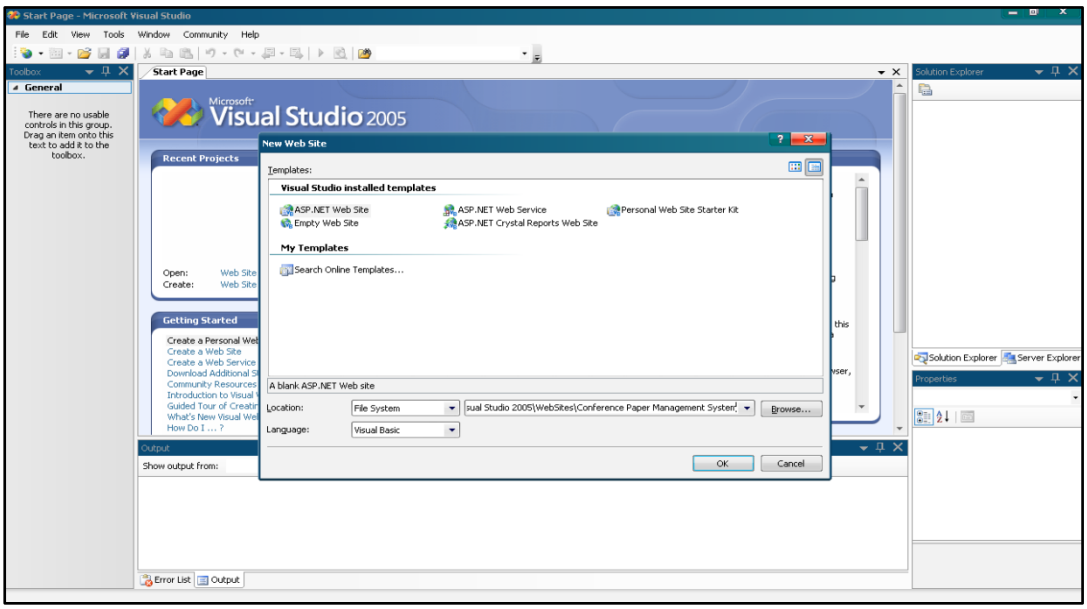

Figure 4 Selelcting a ASP.NET Web Application in Visual Studio 2005

With regard to more technical aspect, there follows a brief description of the major enhancements that have been made to ASP.NET [11]:

- Every ASP.NET control that displays an image includes a method for supplying alternate text, including the ability to set the text to null, and add a long description when required.
- Forms can include labels on input fields, checkboxes and radio buttons, as well as creating sets of fields, defining tab orders and access keys.
- A skip navigation function can be incorporated into a page.
- Tables of data can be set up with the correct headings. Complex nested tables can also be defined.
- Valid transitional or strict XHTML will be automatically generated.
- Tables are not needed for layout.

2.5 Microsoft Access Database

Microsoft Access is a very powerful relational database management system. Its easy-to-understand interface is familiar to many users and many small offices have resources already stored in Access .mdb files.

Access is a desktop database package that can be used by almost any user with skills ranging from beginner to world expert. Creating tables and relationships in Access is quick and relatively easy; the beginners can learn to use the wizards whereas experts can push it to its limits and do some extraordinary things with it. Against the other desktop databases Access is rich in feature. It provides its users with one of the simplest and most flexible database management solutions and allows them to input, extract and manipulate the data into all the different forms as they want. [12]

2.6 Programming Language Technologies

Many different types of languages need to be used to develop this CMS. These languages have different functionalities and requirements respectively.

2.6.1 VB.NET

As mentioned in the previous subchapter, unlike traditional server technologies, .NET supports many various languages. In fact, there's no limit to the number of languages that could be supported. But in order to keep things simple, Visual Basic.NET is selected for this system. Visual Basic .NET (VB.NET) can be viewed as an evolution of Microsoft's Visual Basic (VB) implemented on the Microsoft .NET framework. It is an object-oriented computer language which means that VB.NET generally stays close to the structured, legible syntax that has always made it so easy to read, use, and maintain. [13]

2.6.2 SQL

The structured query language (SQL) is a standard interactive and programming language for getting information from a database. SQL statements are used to retrieve and update data from a database. SQL works well with database programs like Microsoft Access. Primary keywords within the SQL such as SELECT, UPDATE, DELETE, INSERT, and WHERE are common used query to retrieve and update data from the databse for this CMS.

2.6.3 XML

Extensible Markup Language (XML) is a new and very powerful Internet technology. It is part of a suite of technologies used for management, display and exchange of data. XML with specific tags having specific meanings needs to be written to define the Web.config file in Visual Studio 2005 for this CMS,

3. System Design and Implementation

This chapter discusses about the system design and implementation processes in detail. Before starts to describe clearly and exactly how the user interface and database is designed, the user requirements are defined in the first place. After that, in the next subchapter, it illustrates how each page was produced using the software application mentioned in the chapter 2.

3.1 Defining User Requirements of this CMS

As mentioned in the Waterfall methodology overview, the first step in any system development is to define the actual use requirements.So this section lists some starting points for the requirements gathering process for this CMS .

- Integrated authoring environment: The CMS must provide a powerful environment for the authors. This ensures that authors have easy access to the full range of features provided by the CMS.
- Metadata creation: Capturing metadata (abstract, subject, keywords, etc) is critical when managing a large content repository.
- Non-technical authoring: Authors must not be required to use HTML (or other technical knowledge) when creating pages.
- Ease of use & efficiency: For a CMS to be successful, it must be easy to create and maintain content.

In this case, the main users involved in this CMS can be categorized into two groups, authors and reviewers. And this CMS is designed to offer extensive support throughout all phases of the submission and review process for the International conference papers. On the authors' side, it will allow them to upload research papers and track paper status. On the reviewers' side, it will allow them to access details of research papers that they are interested in and upload comments.

3.2 Description of Actual Page Content

After defining the user requirements for this CMS, what type of content would be included on each page of the system are designed correspondingly.

3.2.1 Home Page (Login Page)

The homepage of this CMS, which is the login page at the same time, is mainly designed for providing authorized access to this system. This page has got links to access the upcoming conference websites managed by this CMS. If the user just wants to have a look at either one of the upcoming conferences websites, he doesn't need to log in. Access those websites just by clicking the links listed on the page. If he wants to submit a research paper as an author, or makes any comments to the paper as a reviewer, he must login first.

3.2.2 Register Page

The Register Page requires basic information related to the user such as Last Name, First Name, E-mail address and so on, to give him his own User ID which is used to log in the system. Any user who wants to use this CMS to submit a research paper or gives comments to the paper will be asked to register via this page.

3.2.3 Welcome Page

When the user logs in successfully, he is taken to the Welcome Page. Here the user will see links to the conference center which consists of author center and reviewer center. Users logged in as authors or logged in as reviewers are given Author and Reviewer permissions respectively.

3.2.4 Author Center Page

The Author Center page offers the uploading functionality to the registered authors. Within the Author Center page, Title of the paper, name of the Author, Abstract as well as the Keywords need to be offered by the author. The specific area of the research paper can be selected from a list of choices.

3.2.5 Reviewer Center Page

The Reviewer Center page list all the research papers uploaded by the authors to the registered reviewers. The title, author, keywords, update time and area related to the research file are shown to the reviewers. The users can review the papers by a certain order. Reviewers also have facilities to give comments to the authors, and then give recommendations to the conference organization about whether the paper is accepted or not.

3.2.6 Feedback Page

The feedback page is used for any registered user like authors or reviewers to leave comments or suggestions to the organization to improve the system service quality in the future. The user needs to fill in his name, email address, the title of the paper he had uploaded or reviewed as well as the comments give to the system. After user has successfully submitted the information via this page, this page reads it and stores into the database.

3.2.7 Conference Website

There are two conference websites managed by this CMS. These two websites have got the same structure. Each website has its own Homepage, Call for Paper page, Conference Organization page, Paper Submission page and Contact Us page. when it comes to the Paper Submission, the users will be taken to the CMS login page. Then the users will be required to login first.

3.2.8 Navigation Diagram

A navigation diagram in the **Figure 5** is used to describe how each page involved in this CMS will be related to each other.

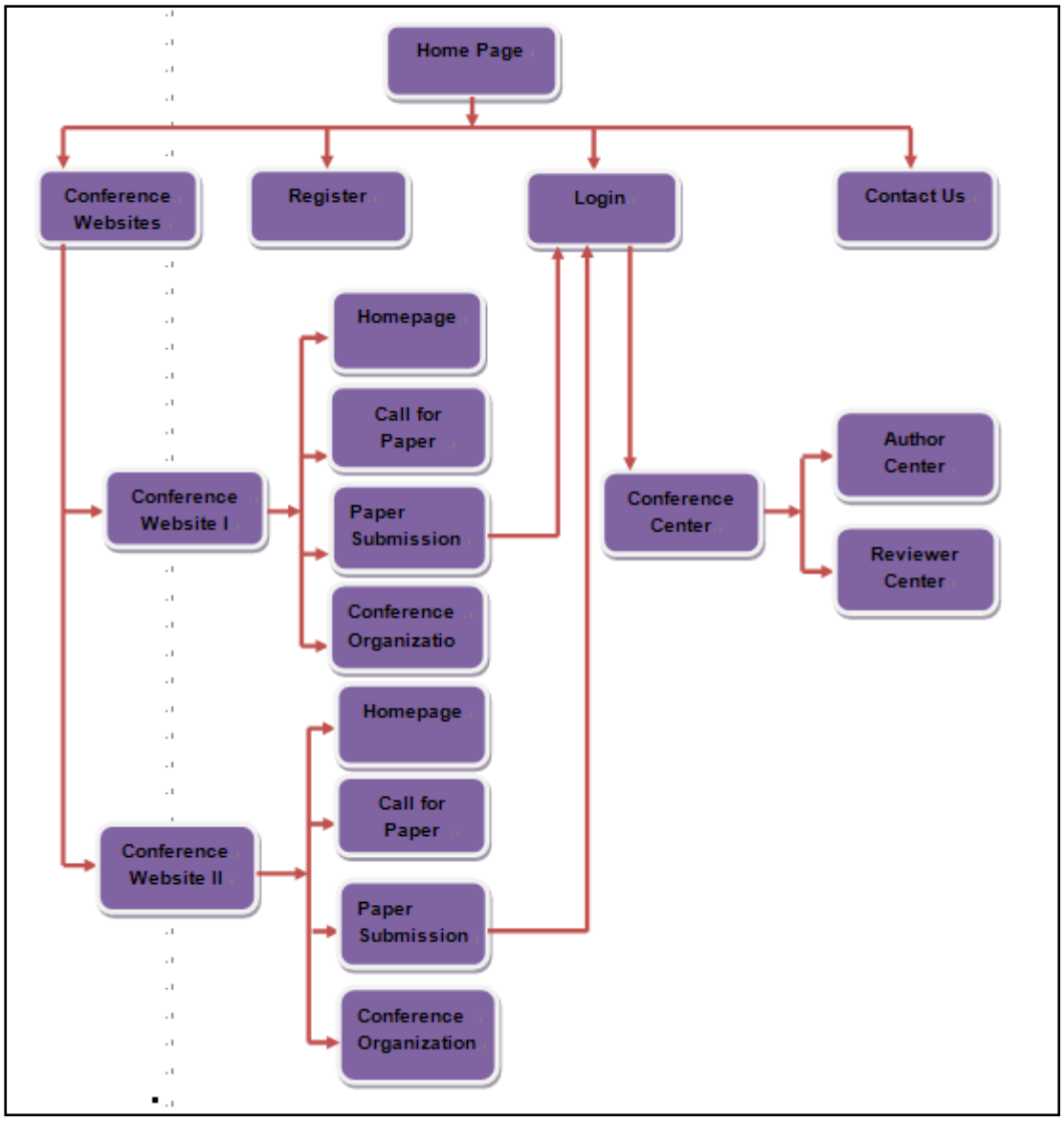

Figure 5 Navigation Diagram

3.3 Description of Navigation Design

From the starting point of this CMS, the first page that the user will encounter will be the login page. Here, the user will be asked to enter a valid userID and password to access the system. The userID and password can be obtained after the user registered successfully via Register page within the system. In addition, the hyperlinks of the two conference websites which are managed by this CMS are listed on the bottom of this page. Any user can access the information related to those conference simply by clicking the links. However, when it comes to research paper submission, the user will be taken back to the login page automatically. Once logged in, the user will see a Welcome Page, which the user will be asked to select an Author Center page or Reviewer Center page for either one of the two conferences managed by this CMS. To upload or to review a specific research file can be done in the Author Center page and Reviewer Center page respectively.

3.4 System Implementation

This section mainly illustrate how the content management system was produced and what exact techniques were used to meet the aims and objectives stated in the previous chapter. It discusses about how each of the software applications mentioned in the literature research chapter was utilized in the development process

3.4.1 Login Page

As stated in the literature research part,at the heart of any ASP.NET page lie server controls, which represent dynamic elements with which the users can interact. The Login control implemented in the login page belongs to one of them.

It's convenient to create a login page using visual studio 2005 because the inbuilt login tab has been added into the toolbox of VS 2005 editor and it has different types of control related to login function.

Drag and drop the login control on the page and then the control will look like a login page at design time. It comes with two labels, two textboxes one for entering LoginID and the other for entering the password, along with a submit button. UserNameLableText, PasswordLabelText and LoginButtonText are there to change the username, password and login button labels respectively. In addition, RememberMe property is configured to display a checkbox giving the user the option to store a persistent cookie on the users' machine. (See **Figure 6** below)

Note that ASP.NET introduced a new development approach that allows code developers to work separately from the presentation designers who lay out individual pages. It means the functional code (which is VB.NET code in this project) is separated from presentation code

(HTML code). The visual elements are created in an .aspx file. At the same time the VB.NET code is displayed in a separate class file, called the code-behind class file (.aspx.vb).

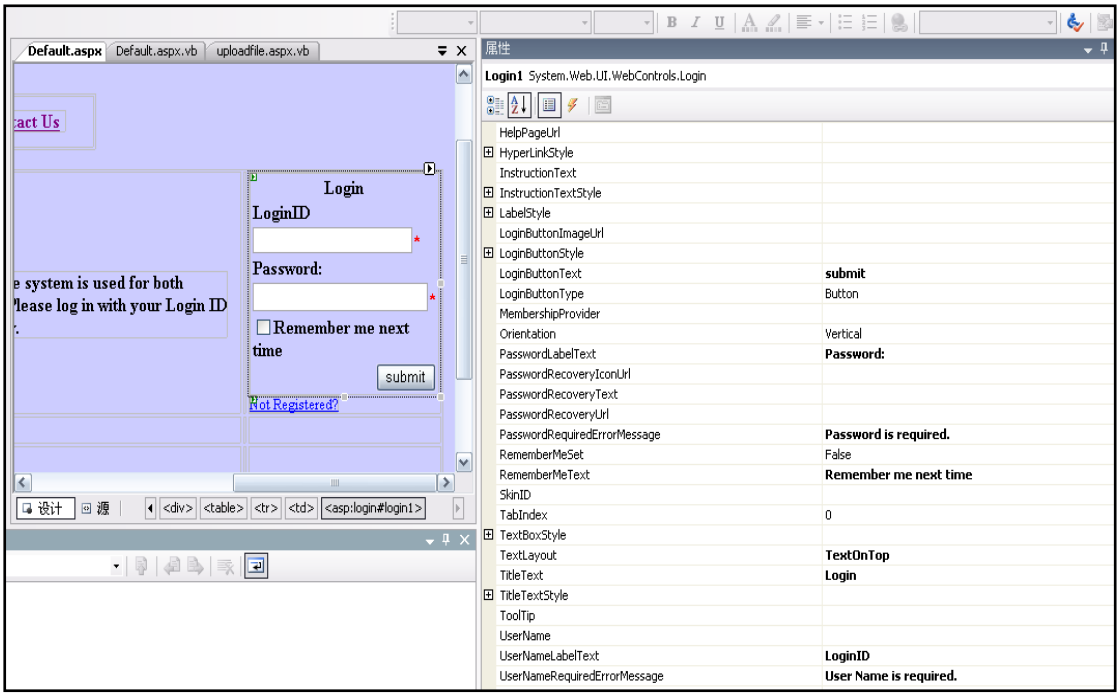

Figure 6 Login Control Property in VS2005

Double click on the control and it will be redirected to Authenticate event of Login control in code-behind class file. Some code needs to be written for authenticating a user. The complete source code will be attached to the **Appendix B** and some codewill be explained later. The screenshot of final homepage is shown below in the **Figure 7**.

If a password or the LoginID is not entered conrrectly, the user will not be able to access the system. Form validation has been used here. For example, if an unauthorized user was trying to access to the system leaving all the login textboxes empty, it will appear two red asterisks on the right of the textbox to remind the user to enter the correct Login information.

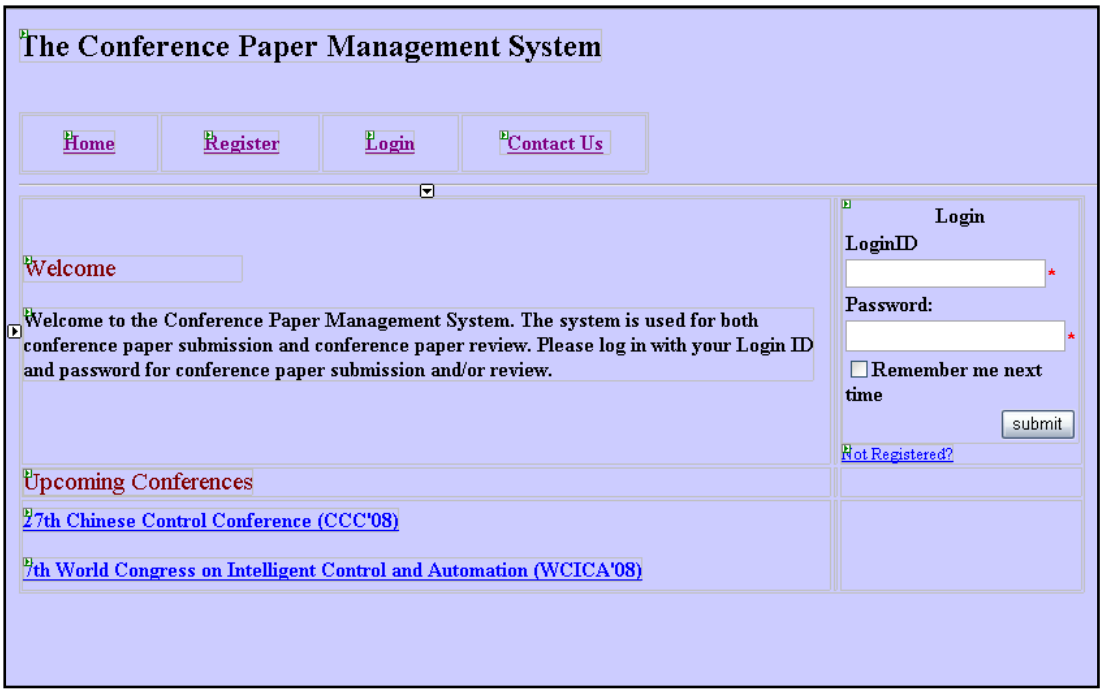
The Conference Paper Management System
Home
Register
Login
Contact Us
Welcome
Welcome to the Conference Paper Management System. The system is used for both conference paper submission and conference paper review. Please log in with your Login ID and password for conference paper submission and/or review.
Upcoming Conferences
27th Chinese Control Conference (CCC'08)
7th World Congress on Intelligent Control and Automation (WCICA'08)
Login
LoginID
Password:
Remember me next time
submit
Not Registered?

Figure 7 screen shot of Homepage

3.4.2 Register Page

As descripted in the last section, the user will be asked to offer basic information in order to register successfully. These basic information includes what is his title, what user role and organization type does he belong to. Some choices are given in the form of a dropdownlist for the users to select. So in order to display a list of titles, user roles and organization types in the form of a dropdownlist , a DropDownList Control is used when developed this page.

This DropDownList is provided as a server control in ASP.NET like many other controls. When users click the button, a list of items will be displayed. Each selectable item in a DropDownList control is defined by a ListItem element. A declaration for this DropDownList is shown below and hence on the user's side, he can select one of user roles from several items. Note that the "runat" must be set to "server" because the control is a server control.

```
<asp:DropDownList ID="userrole" runat="server">
<asp:ListItem>Doctor</asp:ListItem>
<asp:ListItem>Faculty</asp:ListItem>
<asp:ListItem>Librarian</asp:ListItem>
<asp:ListItem>Researcher</asp:ListItem>
<asp:ListItem>Student</asp:ListItem>
<asp:ListItem>Teacher</asp:ListItem>
<asp:ListItem>Other</asp:ListItem>
</asp:DropDownList></td>
```

In addition, a list of world country names is displayed in a dropdownlist in this page as well by attaching the “dropdownlist” control to a list of world country names stored in the database. Here, the SqlDataSource control is used to bind the data. The SqlDataSource control is a data source control that represents a connection to an ADO.NET SQL database provider, such as SQL, OLEDB, ODBC, or Oracle. In this project, the database provider is OLEDB. The details about the data connection part will be discussed later in the database development section. The screenshot of final register page is shown in the **Figure 8**.

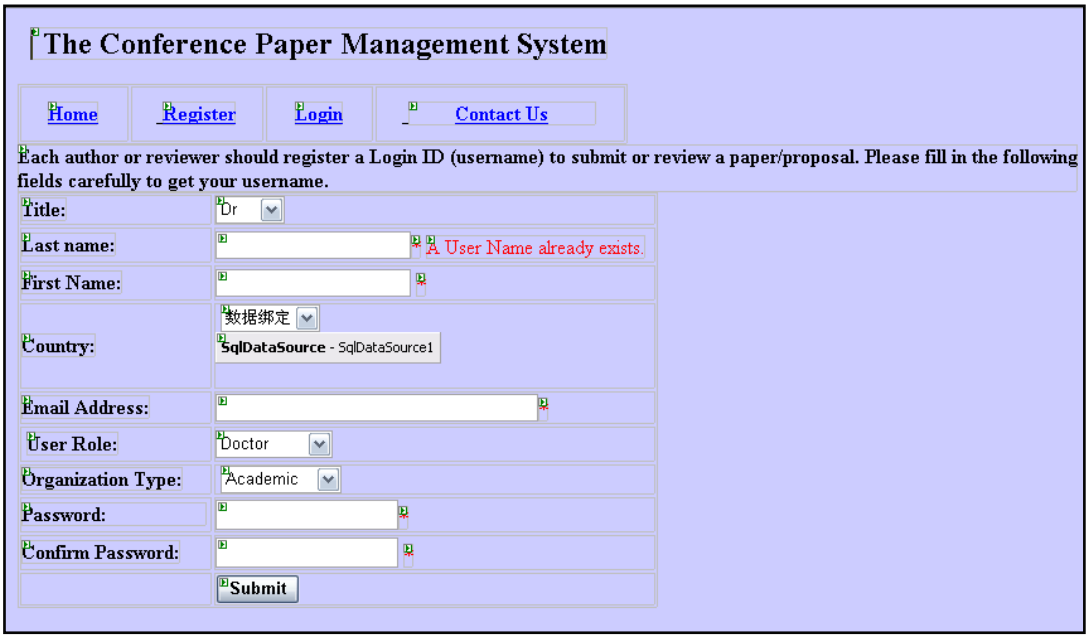

Figure 8 screen shot of Register Page

3.4.3 Welcome Page

When the user logs in successfully, he is taken to the Welcome Page. Users logged in as authors or logged in as reviewers are given Author and Reviewer permissions respectively. The **Figure 9** is the screen shot of Welcome Page. It has got hyperlinks to the Author Center or Reviewer Center. A logout function is incorporated in this page, which is used to log the user out of the system. This function increases the system protection and enhances security against the unauthorized users.

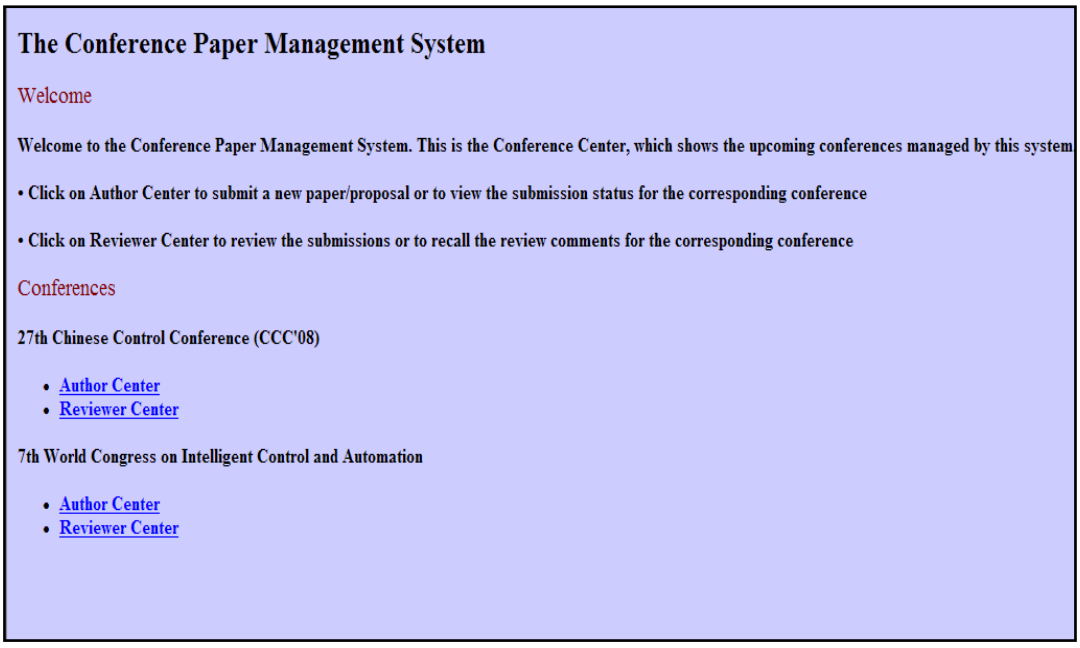
The Conference Paper Management System
Welcome
Welcome to the Conference Paper Management System. This is the Conference Center, which shows the upcoming conferences managed by this system
• Click on Author Center to submit a new paper/proposal or to view the submission status for the corresponding conference
• Click on Reviewer Center to review the submissions or to recall the review comments for the corresponding conference
Conferences
27th Chinese Control Conference (CCC'08)
Author Center
Reviewer Center
7th World Congress on Intelligent Control and Automation
Author Center
Reviewer Center

Figure 9 screen shot of Conference Center Page

3.4.4 Author Center Page

As stated in the Chapter 1, the most important functionality required by the authors is to allow them to upload the research paper via this CMS. And this objective is achieved by using the FileUpload control provided in the Visual Studio 2005, because the FileUpload control allows developers to drop the control on a page, let it browse a file and upload the file to the server.

To realize the uploading function, the first step is to drop the FileUpload control from Toolbox to the Web page in the VS2005. The following code adds the FileUpLoad control:

```
<asp: FileUpload ID="FileUpload1" runat="server" />
```

In order to support file upload functionality, a Button control named “Submit” in this page needs to be added.

```
<asp: Button ID="Button1" runat="server" Font-Bold="True" Text="Submit" Font-Size="Medium" /></td>
```

As mentioned in the description of Author Center Page conten, the specific area of the research paper needs to be specified when the author is going to upload a research file. The area of the conference paper is displayed in the form of a drop down list and is selectable by the author. This function is achieved by using the DropDownList control as the same way as a list of world country shown in the register page.

The file types which are allowed to upload via this CMS are restricted to Word or PDF. In order to impose this restriction, the If statement is used here in conjunction with an Else statement, which specifies what should happen if the condition is not met. So the code written below means if it is found that the uploading file type is not Word or PDF, the user will see a warning sentence like" failed!! Only .pdf and .doc files are allowed!" on the screen.

```
If (_fileExtension = ".pdf") Then
'//Save File to the proper directory
_postedFile.SaveAs( _
System.Web.HttpContext.Current.Request.MapPath( _
"files/") + _fileName)
_message.Append(_fileName + "<BR>")

ElseIf (_fileExtension = ".doc") Then
'//Save File to the proper directory
_postedFile.SaveAs( _
System.Web.HttpContext.Current.Request.MapPath( _
"doc/") + _fileName)
_message.Append(_fileName + "<BR>")

Else
_message.Append(_fileName & " <font color=""red"">failed!! Only .pdf and .doc files are
allowed!</font> <BR>")
End If
```

Upon successful submission, the uploading research paper will get stored in the database on the server and the corresponding reviewers will have facilities for accessing the paper via Reviewer Center Page which will be explained in the next section.

What's more, a calendar is put here to remind the authors what exact date it is by using a calendar control provided in Visual Studio 2005. The calendar control displays a one-month calendar that allows the user to select dates and move to the next and previous months. In this page a Calendar control is declared in an .aspx file. The days are displayed with full names, the user may select a day, a week, or the whole month, and the selected day/week/month is displayed with a grey background color. [14]

The **Figure 10** shown in the below represents Author Center page which is only accessible by a registered author. The author can upload research paper by clicking on Browse and then select the file from specified location on his local computer.

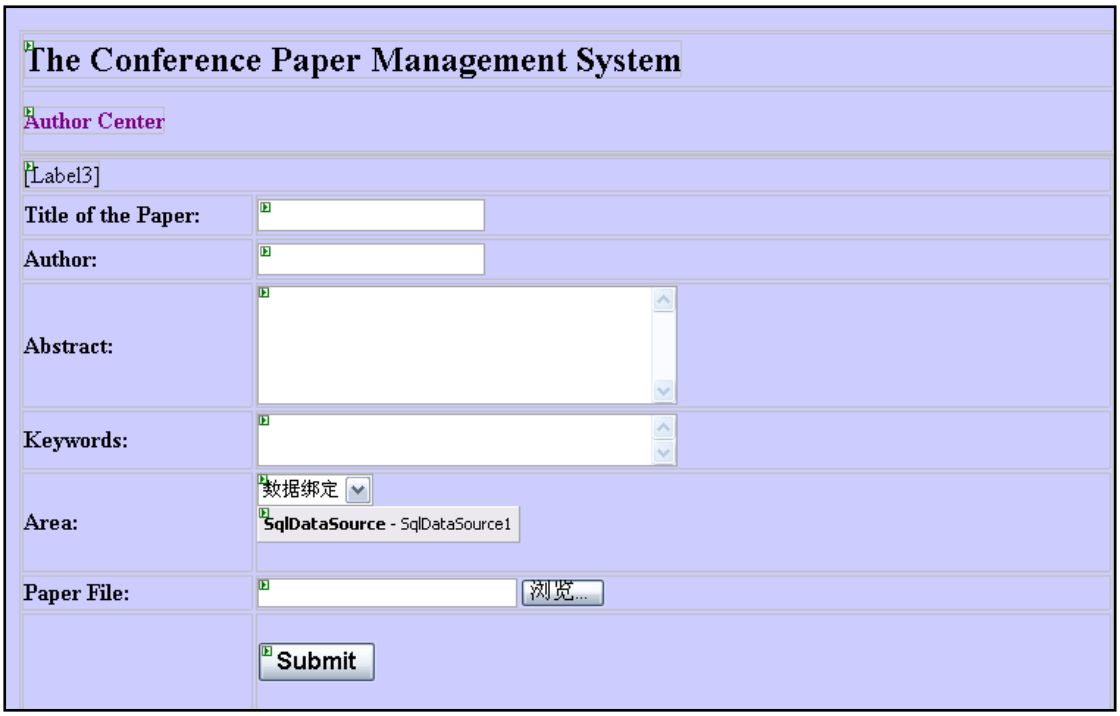

Figure 10 screen shot of Author Center Page

3.4.5 Reviewer Center Page

The Reviewer Center Page is only accessible by a registered reviewer, the reviewers have facilities for accessing research papers uploaded by the authors and giving recommendations such as accept or reject to those papers to the conference organization. Moreover, the reviewers can upload comments to the papers as well.

As shown in the following **Figure 11,** the Reviewer Center page has got a table to display the detailed information related to the research paper uploaded by the user to the reviewers. In this table, each column represents a field and each row represents a record. This table displays comprehensive information about the uploaded research paper. Instead of just showing the title,area and the full text, it also displays information like the date the paper was uploaded , and the author that created the research paper.When the reviewers click on each of these fields such as Title, Author or Keywords, the research paper will be displayed by alphabetical order or by the time order.

The page has also got text boxes that need to be filled in by the reviewers to submit their opinions about the research paper. The text boxes have “Reasons for Recommendation” and “Comments to the Author” fields for the reviewers to explain why the paper they are reviewing is accepted or rejected.

In order to display the information related to the research paper in the form of a table as shown in the figure, the GridView control provided in the toolbox in Visual Studio 2005 is used.The GridView control provides more flexibility in displaying and working with data from the database, for example,it enables the users to select, sort, and edit those displayed items just by specifying a couple options in the control.

To utilize this control, the first step is to configure a SqlDataSource control and then bind this control to the DataView control. After that, in order tosee the text in the cells of the GridView Control, the Bound column needs to be set. This can be done by using the Smart tag which appears when right clicks on the GridView Control. The details about the data binding will be discussed later in the database development section.

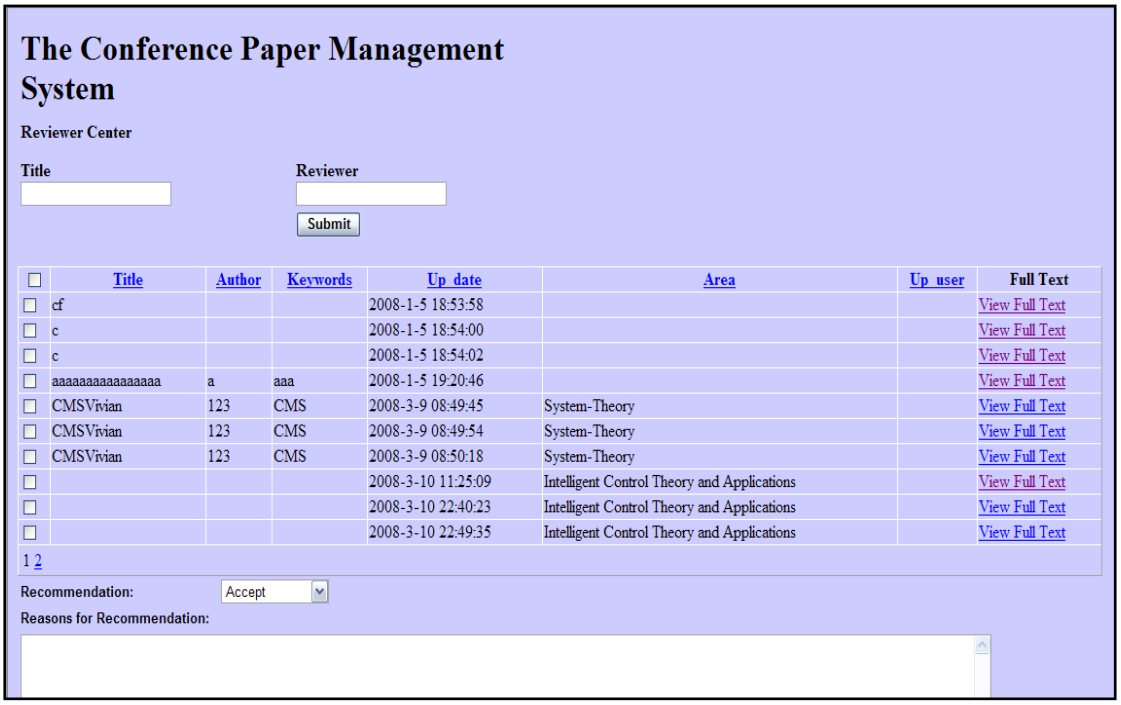
The Conference Paper Management System
Reviewer Center
Title
Reviewer
Submit
Title Author Keywords Up_date Area Up_user Full Text
cf 2008-1-5 18:53:58 View Full Text
c 2008-1-5 18:54:00 View Full Text
c 2008-1-5 18:54:02 View Full Text
aaaaaaaaaaaaaaa a aaa 2008-1-5 19:20:46 View Full Text
CMSVivian 123 CMS 2008-3-9 08:49:45 System-Theory View Full Text
CMSVivian 123 CMS 2008-3-9 08:49:54 System-Theory View Full Text
CMSVivian 123 CMS 2008-3-9 08:50:18 System-Theory View Full Text
2008-3-10 11:25:09 Intelligent Control Theory and Applications View Full Text
2008-3-10 22:40:23 Intelligent Control Theory and Applications View Full Text
2008-3-10 22:49:35 Intelligent Control Theory and Applications View Full Text
1 2
Recommendation:
Accept
Reasons for Recommendation:

Figure 11 screen shot of Reviewer Center Page

3.4.6 Conference Website Homepage

The two screen shots (**Figure 12 and Figure 13**) in the below shows the homepage of the two international conference websites managed by this CMS. One is the 27th Chinese Control Conference and the other is the 7th World Congress on Intelligent Control and Animation. The links of these two conference websites are listed in the system homepage.

These two websites have the same structure, which means both of them have Homepage, Call for Paper, Conference Organization, Paper Submission and Contact Us page. The information about these two conferences is clear described in each page. Any user has access to this information simply by clicking on the hyperlinks. However, when it comes to the

Paper Submission, the users will be taken to the CMS homepage, which is the login page at the same time.

An Email function is put into operation via Contact Us page, if the user clicks on this link, it will pop up an Outlook Express dialogue box for the user to leave message for the conference organizors.

The other webpages of these two websites are shown in the Appendix H and Appendix I

The 27th
Chinese Control Conference
Chinese Association Automation
Technical Committee on Control, CAA
Kunming University of Science and Technology
Home
Call for Paper
Conference Organization
Paper Submission
Contact Us
Home
The Chinese Control Conference (CCC) is an annual international conference organized by Tech. Com. on Control Theory, CAA. It provides a forum for scientists and engineers over the world to present their new theoretical results and techniques in the field of systems and control. The conference consists of plenary talks, panel discussions, oral and poster sessions etc. for academic exchanges. The conference proceedings have been selected for coverage in ISI proceedings/ISTP (Index to Scientific and Technical Proceedings) since 2005 and included in the IEEE CPP (Conference Publications Program) since 2006. The 27th CCC is organized by the Kunming University of Science and Technology and will be held in Kunming, which is located in the west of China and is known as the "Spring City". Taking this opportunity we sincerely welcome our colleagues worldwide to join us for this conference.
Conference Date: July 16-18, 2008
Conference Address: Kunming, Yunnan, China

Figure 12 screen shot of Conference Website I Homepage

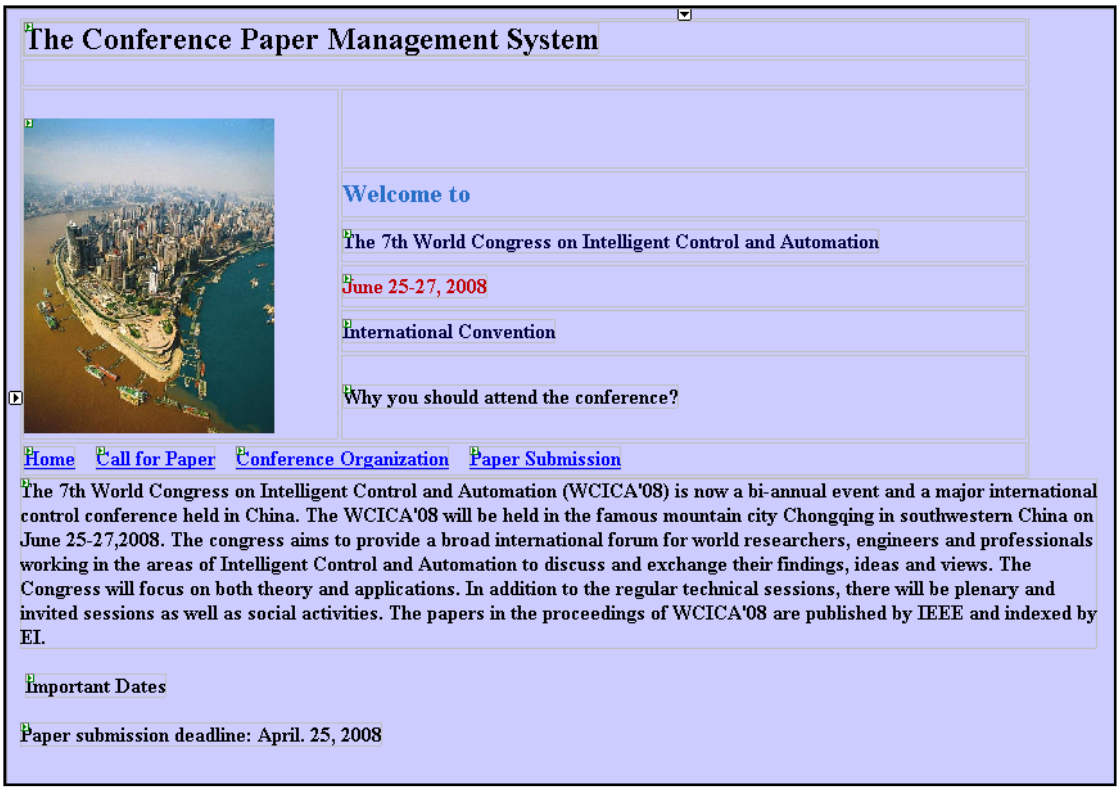
The Conference Paper Management System
Welcome to
The 7th World Congress on Intelligent Control and Automation
June 25-27, 2008
International Convention
Why you should attend the conference?
Home
Call for Paper
Conference Organization
Paper Submission
The 7th World Congress on Intelligent Control and Automation (WCICA'08) is now a bi-annual event and a major international control conference held in China. The WCICA'08 will be held in the famous mountain city Chongqing in southwestern China on June 25-27,2008. The congress aims to provide a broad international forum for world researchers, engineers and professionals working in the areas of Intelligent Control and Automation to discuss and exchange their findings, ideas and views. The Congress will focus on both theory and applications. In addition to the regular technical sessions, there will be plenary and invited sessions as well as social activities. The papers in the proceedings of WCICA'08 are published by IEEE and indexed by EI.
Important Dates
Paper submission deadline: April. 25, 2008

Figure 13 screen shot of Conference Website II Homepage

3.4.7 Feedback Page

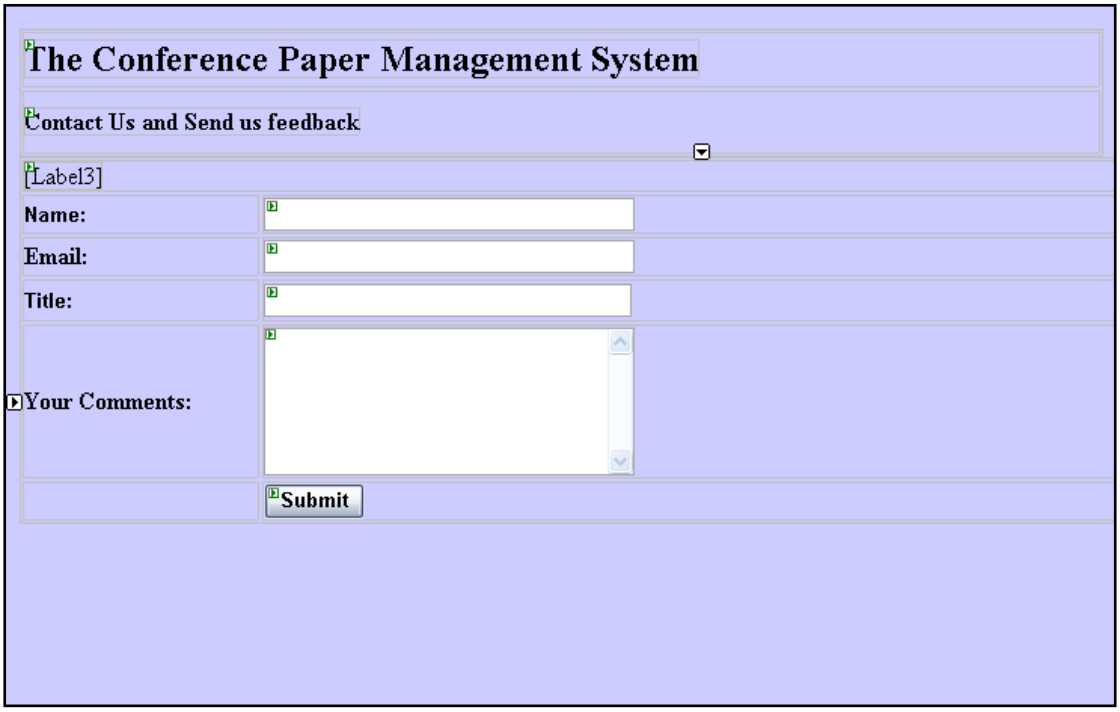

Figure 14 screen shot of Feedback Page

The above **Figure 14** shows feedback page which is for any registered user like authors or reviewers to leave comments or suggestions to improve the system service quality.
The user needs to fill in his name, email address, the title of the paper he had uploaded or reviewed as well as the comments giving to the system. After user has successfully submitted the information via this page, this page reads it and stores into the database. And the feedback information will be available to view by the conference organizors.

3.5 Database Development

Database development begins discussing the physical design of a relational database using Microsoft Access Database. Database design starts with a conceptual data model and produces a specification of a logical schema; this will usually determine the specific type of database system that is required [15].

The approach to develop the database here is to use a relational database environment. A relational representation of the conceptual data model is used as input to the design process. The output of the design stage is a detailed relational specification, the logical schema, of all the tables and constraints needed to satisfy the description of the data in the conceptual data model. It is during the design activity that choices are made as to which tables are most appropriate for representing the data in a database. These choices must take into account various design criteria including, for example, flexibility for change, control of duplication and how best to represent the constraints. It is the tables defined by the logical schema that determine what data are stored and how they may be manipulated in the database.

This first step (sometimes called a first-cut design) will accurately represent the tables and constraints needed to satisfy the conceptual data model description, and so satisfies the completeness and integrity requirements, but it may be inflexible or offer poor usability. The first-cut design is then flexed to improve the quality of the database design. **Figure 15** summarizes the steps involved in the database design stage [15].

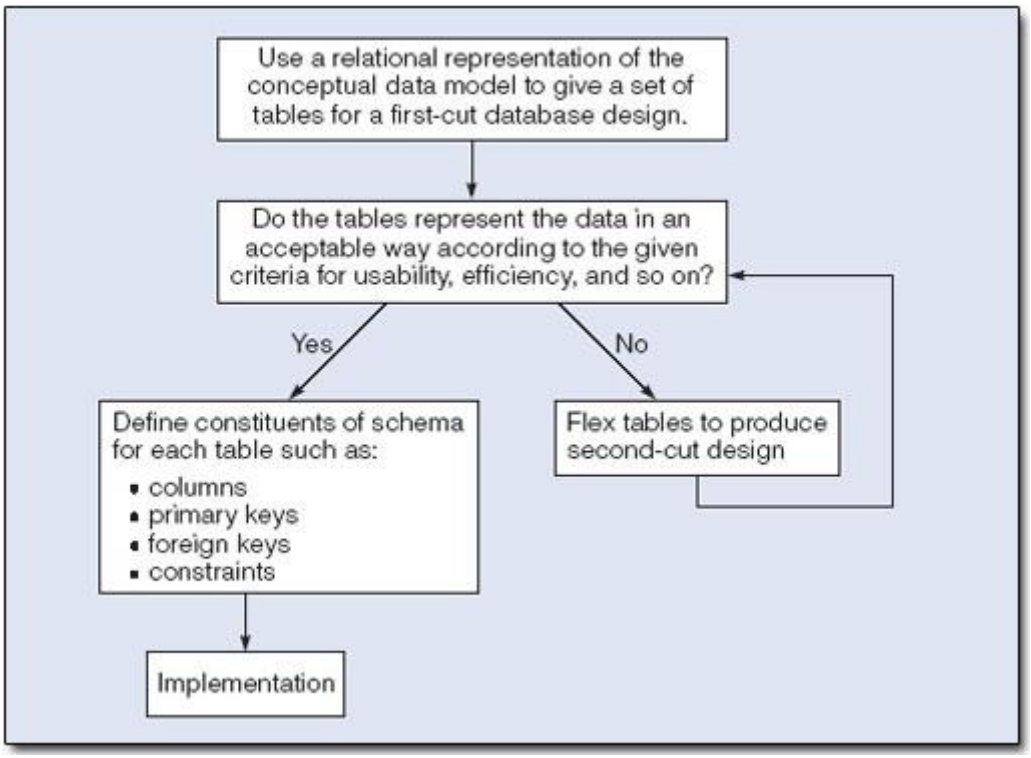
Use a relational representation of the conceptual data model to give a set of tables for a first-cut database design.
Do the tables represent the data in an acceptable way according to the given criteria for usability, efficiency, and so on?
Yes
No
Define constituents of schema for each table such as:
columns
primary keys
foreign keys
constraints
Flex tables to produce second-cut design
Implementation

Figure 15 Summary of steps for database design [15]

After that it will go to the implementation stage. The Implementation stage mainly involves the construction of a database according to the specification given in the previous stage. The first step of implementation would include meeting the design requirements with the best available implementing tools and then using those tools for the implementation.

3.5.1 Table Design

As stated in the literature research chapter, Microsoft Access is a very powerful relational database management system and it provides users with one of the simplest and most flexible database management solutions. For this reason, the database within the project was created using Microsoft Access as the implementing tool.

Although a relational database might be comprised of various objects such as tables, queries, forms, reports, or modules, design always begins with the tables. Tables are the fundamental logical building blocks of relational databases. In the context of database, a table is a grouping of columns of data that pertains to a single particular class of things about which information needs to be stored. Columns can also be referred to as fields or attributes, and rows can be called records. [16]

The following steps show the process to create tables in Microsoft Access:

- Start Microsoft Access by double-clicking on the icon.

- In the Task Pane (shown in the **Figure 16**), choose "Create a new file..." item.
- Select “Blank Database” from the Task Pane.
- Type the name “CMS” for the database and select a place to save the file.
- Click on Create. Then the Database window appears. This window shows tabs for several types of database objects. These objects are all saved together under “CMS” as one database, with the .mdb file extension.

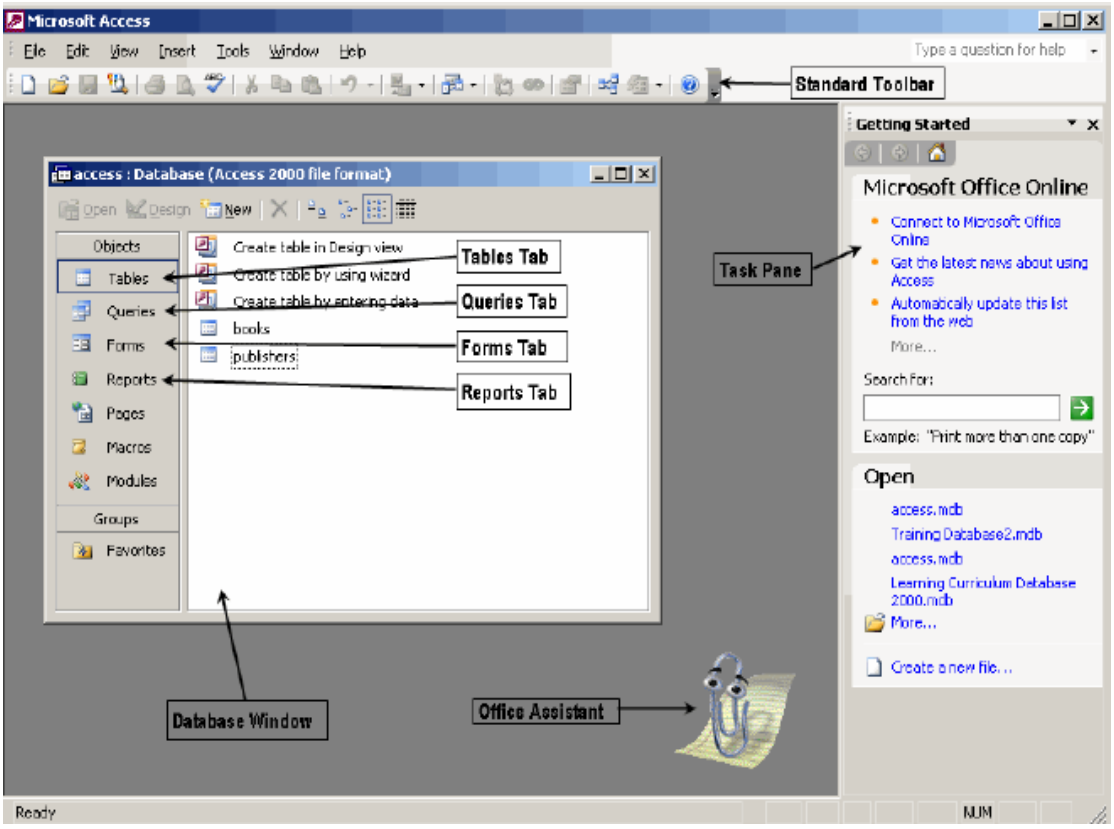

Figure 16 Creating Database in Access

Four main tables designed for this particular content management system are shown as below, that is, User Table, Paper Table, Review Table and Feedback Table.

Field Name	Data Type	Description
ID	AutoNumber	The unique identifier for this table
Reg_Name	Text	The user's registered name
Reg_Password	Text	The user's registered password
Country	Text	Which country the user comes from
Organization	Text	Which organization the user belongs to
Email	Text	The user's email address
Userrole	Text	The user's role (reviewer or author)
Title	Text	The title of the user's article

Figure 17 User Table

As shown in the above **Figure 17** , the User Table has eight fields including primary key (ID), registered name, registered password, country, organization, email, user role and title. All the data fields are self-explanatory through their names. This table is created to collect the basic information associated with the user as mentioned in the Register Page of the CMS.

Field Name	Data Type	Description
ID	AutoNumber	The unique identifier for this table
Title	Text	The title of the paper
Abstract	Text	The abstract of the paper
Author	Text	The author of the paper
Keywords	Text	The keywords of the paper
Area	Text	The area which the paper belongs to
Up_date	Date/Time	The update time of the paper
Up_User	Text	The update user of the paper
Reasons	Text	The reasons why the paper is recommended
Comments	Text	The comments given to the paper
Reviewuser	Text	The review user who gives the comments to the paper

Figure 18 Paper Table

In the **Figure 18**, the Paper Table has eleven fields including primary key (ID), title, abstract, author, keywords, area, update time, update user, reasons, comments, and reviewer user. The table shows the type of data stored in each field clearly and it has a record of all the information related to the research paper.

Field Name	Data Type	Description
ID	AutoNumber	The unique identifier for this table
PaperID	Number	Paper ID number which comes from paper table
UserID	Number	User ID number which comes from paper table
AddDate	Date/Time	The time of submission

Figure 19 Review Table

In the Review Table shown in the above **Figure 19** , there are four fields in total including primary key (ID), paper ID, user ID, and Add Date. The table also shows the data type.

Field Name	Data Type	Description
ID	AutoNumber	The unique identifier for this table
Username	Text	The user's login name
Email	Text	The user's email address
Title	Text	The title of the paper the user submitted or reviewed
Content	Text	The actual feedback given related to the website

Figure 20 Feedback Table

The Feedback Table (see **Figure 20**) is designed to record comments or suggestions from registered users about the CMS in order to improve the service quality. In this table, there are five fields in total which are primary key (ID), username, email, title and content.

3.5.2 Connection to Database

Connect the web front end to the database is a very important part of the system. In the context of this CMS for example, when an author uploads a research paper, the database will record the uploading information with date and time. The research paper is then saved on the server but the link is saved in the databse. These data can then be retrieved by the reviewers via reviewer center using web front end. Reviewers then submit their recommendations or comments for each research paper. And those recommendations or comments should be retrieved to the web front end for the conference organizors to view.

ASP.NET gives their users flexibility in how they connect to databases. One of the features in ASP.NET is its data-specific controls, which are divided into two groups: DataSource controls and Data-Bound controls. DataSource controls are used to create the connection to the databases, whereas the Data-Bound controls are used to take the information from the data source controls and create a rendering on the page. A number of data source controls are available in ASP.NET; SqlDataSource Control is one of them and is used in this project. The Data-Bound controls like GridView Control or DropDownList control (mentioned in the previous section already) are used to take the information from the data source controls

As ASP.NET is part of the .NET Framework, the application developers have access to all the goodies that are built into it in the form of the .NET Framework Class Library. This library represents a huge resource of tools and features in the form of classes; these classes are organized in a hierarchy of namespaces. The data provider is a class that communicates with a specific type of database, The System.Data.Oledb data provider is used in this CMS to connect to the database from ASP.NET applications.

Several steps as follows are used to create the connection to the Access database using the SqlDataSource control:

In Visual Studio 2005, open a Web site, add an ASP.NET page (Web Form), and switch to Design view. From the Data group in the Toolbox, drag a SqlDataSource control onto the page. On the SqlDataSource Tasks shortcut menu, click Configure Data Source. Then Click New Connection. In the Add Connection dialog box, click Change, in the Change Data Source dialog box, click Microsoft Access Database File, and then click OK. In the Database file name box, enter the path *D:\Backup\My Documents\Visual Studio 2005\WebSites\Content Management System\CMS\App_Data\cms.mdb* to connect the Access database.

A connection string provides the information that a provider needs to communicate with a particular database. The connection string usually supplies the server or location of the database server and the particular database to use. The connection string used in this CMS is as follows:

```
myConn.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb"
```

After the SqlDataSource control is added in the page, the next step is to bind this control to a GridView Control. Again, this can be done in the VS2005 by dragging and dropping a GridView Control. Once the GridView control is added to the page in design mode, a small arrow will appear on on the right upper corner of the GridView. This brings up a dialog where the developers can specify which datasource to bind to, so the SqlDataSource control is selected here.

3.6 ASP .NET Web.config File

An ASP .NET application has one web.config file which keeps the configurations required for the corresponding application. Web.config file is written in Extensible Markup Language (XML) with specific tags having specific meanings. There are number of important settings that can be stored in the configuration file. In this project, database connections, error handling and security information are stored inside Web.config file.

The database connection string is the most important configuration data that can be stored inside the web.config file. Storing the connection string in the web.config file makes sense, since any modifications to the database configurations can be maintained at a single location and it can be read and used anywhere in the program. [17] The following figure shows the database connection string which is stored in the web.config file.

```
<configuration>
        <appSettings/>
        <connectionStrings>
                <remove name="LocalSqlServer"/>
                <add name="CMSConnStr"
connectionString="Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb" providerName="System.Data.OleDb"/>
        </connectionStrings>
        <system.web>
                <!--
```

Error handling is one of the most important parts of any web application. Each error has to be caught and suitable action has to be taken to resolve that problem. ASP.NET web.config file lets application developers configure what is going to do when an error occurs in the application. The following figure shows the XML tag in the web.config file that deals with errors:

```
<customErrors mode="RemoteOnly" defaultRedirect="GenericErrorPage.htm">
        <error statusCode="403" redirect="NoAccess.htm" />
        <error statusCode="404" redirect="FileNotFound.htm" />
    </customErrors>
```

"RemoteOnly" specifies that custom errors are shown only to remote clients, and ASP.NET errors are shown to the local host. This is default and tells the ASP.NET to display custom errors from a remote client and display a page named GenericErrorPage.htm.

Error "403" is "No Access" error. Error "404" is "File not found" error. If custom error mode is turned "off" then the designers will see ASP.NET default error message.

The most critical aspect of any application is the security. ASP.NET offers many different types of security method (such as Windows authentication, passport authentication or forms authentication) which can be used depending on the condition and type of security the users need. Within this project, the Windows authentication is used.

The main benefit of using Windows authentication is that it can be coupled with IIS authentication so that no custom code needs to be written. [18] The Windows authentication provider is the default provider for ASP .NET. It authenticates users based on the users' Windows accounts. Windows authentication in ASP.NET actually relies on IIS to do the authentication. IIS can be configured so that only users on a Windows domain can log in. If a user attempts to access a page and is not authenticated, they'll be shown a dialog box asking them to enter their username and password. This information is then passed to the Web server and checked against the list of users in the domain. If the user has supplied valid credentials, access is granted. The identity of the user is then passed to the ASP.NET engine.[19]

4. System Testing and Evaluation

A system test is one which exercises a complete system in much the same way as a user would. The purpose of testing is to discover and resolve the errors occurred in the process so as to achieve a functional system. This chapter provides findings of a number of tests which were carried out on the system and evaluate the system afterwards.

4.1 Testing Methodology

Typically, software will go through two stages of testing before it is considered to be completely finished. The first stage is called Alpha testing. In this stage, the testers and real customers test the software in development site combinedly. The second stage, which is called Beta testing, generally involves a limited number of external users. Therefore, the tests involved in this CMS were carried out by using Alpha Testing.

4.2 Testing Tables

Tesing of this content management system has been conducted throughout system development, testing navigational links and connections to the database. This CMS has been tested on Windows XP Professional with IIS and the University Server. The following table shows a number of test procedures performed on the system.

NO	ACTION	EXPECTED RESULT	ACTUAL RESULT
		Register Page	
1	Click Register Page Link	Go to Register Page	Directly go to the Register page as expected
2	Register as an Author and then click submit button	A n Alert box saying “Registration Successful” pops up and the user is taken to the login page automatically	Directly go to the login page of the CMS as expected
		Login Page	
1	Enter wrong password at login page	User is not allowed to enter the system. Error message “You login attempt was not successful. Please try again” should appear	Error message appear in red color as expected.
2	Enter correct password at login page	Login to the system successfully and Welcome Page should appear.	Logged in successfully as expected.

3	Once logged in to the system, click on the Log Out link	Log out current user and redirect to the login page	Logged out and go back to the login page as expected.
		Contact Us Page	
1	Click Contact Us Link	Go to Contact Us Page	Directly go to the Contact Us page as expected
		Upcoming Conference (CCC'08) Website	
1	Click "CCC'08 Conference Website" Link	Go to the Homepage of CCC'08 Conference Website which is managed by the CMS	Go to the homepage of CCC'08 as expected
2	Click "Call for Paper" Link	Go to Call for Paper page	Access to the page as expected
3	Click "Conference Organization" Link	Go to Conference Organization page	Access to the page as expected
4	Click "Paper Submission" Link	Directly take the user back to the CMS login page	The login page of CMS appears as expected
5	Click "Contact Us" Link	Go to Contact Us page	Access to the page as expected
		Upcoming Conference (WCICA'08) Website	
1	Click "CCC'08 Conference Website" Link	Go to the Homepage of CCC'08 Conference Website which is managed by the CMS	Go to the homepage of CCC'08 as expected
2	Click "Call for Paper" Link	Go to Call for Paper page	Access to the page as expected
3	Click "Conference Organization" Link	Go to Conference Organization page	Access to the page as expected
4	Click "Paper Submission" Link	Directly take the user back to the CMS login page	The login page of CMS appears as expected
5	Click "Contact Us" Link	Go to Contact Us page	Access to the page as expected
		Conference Center Page	
1	Login as an author, and then Click Author Center Link in the conference center page	Go to the Author Center page	The link works as expected
2	Logged in as an author,	An Alert box saying "Upload	Upload the file

	access to the Author Center page and then upload a file with either .pdf or .doc file extension	File Successful!" pops up and the name as well as the format of uploading file is displayed in red color on the page.	successfully as expected.
3	Logged in as an author first, access to the Author Center page and then upload a file with other file format except .pdf or .doc file extension	An Alert box saying "Upload File Unsuccessful!" pops up and message says "Only .pdf and .doc files are allowed!" in red color on the page.	Failed to upload the file. Message says "Only .pdf and .doc files are allowed!" in red color on the page as expected.
4	Click Reviewer Center Link in this page	Go to the Reviewer Center page	The link works as expected
5	Logged in as a reviewer first, access to the Reviewer Center page and then review the given research papers by clicking the Title/Author/Area/Update.	The given research files should be displayed by alphabetical order when clicked Title/Author/Area and displayed by uploading time order when clicked Update.	The given research files are displayed by alphabetical order or uploading time order as expected.

Tests showed above are mainly used to test the website functionality that was implemented within the system.

In additon, database testing has been carried out throughout the stages in the development processes and it includes appropriate reviews to examine carefully the outputs of the development activities. The aim of database testing is to discover errors in the design and implementation of the database.

Validation and verification are the two main tasks involved in the database testing process. Validation is used to answer the question: has the right database been developed to meet the requirements? It attempts to confirm that the right database has been constructed, with the right characteristics to meet the specified requirements. And verification answers the question: has the database design been implemented correctly? Verification ensures that the processing steps have been correctly implemented and contain no errors in program logic or execution sequences. [20]

4.3 Problems Occurred

4.3.1 Login Problem

Login problem occurred as the user interface failed to connect to the database. It was found that the there was something wrong with database connection code and caused the ASP.NET pages not connecting to the database correctly. After the code was revised, the login problem was resolved.

4.3.2 Failed to View Full Text

Reviewers should be able to view full text of research files uploaded by the authors simply by clicking the View Full Text link in the Reviewer Center Page. However, an error message appeared as shown in the **Figure 21** and failed to view the full text. Maybe this problem happened mainly because that by default IIS only serves static content like HTML so IIS disables dynamic content (ASP.NET page in this project) for security reasons.

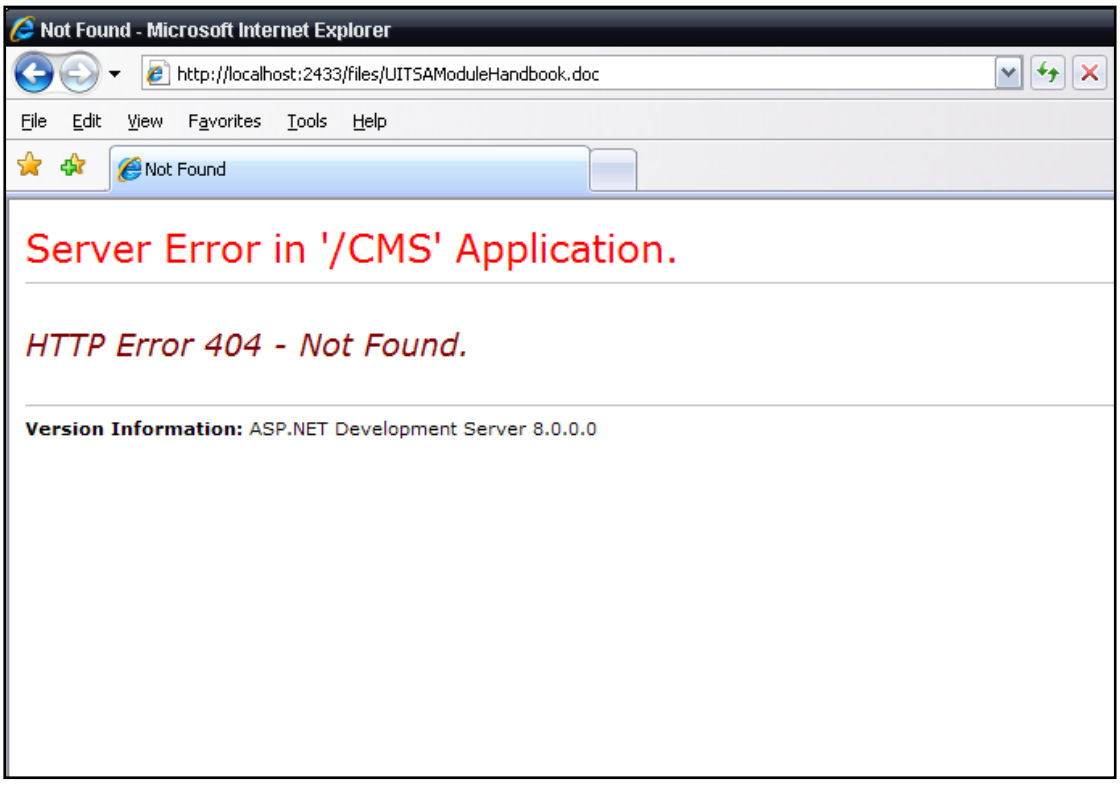
Not Found - Microsoft Internet Explorer
http://localhost:2433/files/UITSAModuleHandbook.doc
File Edit View Favorites Tools Help
Not Found
Server Error in '/CMS' Application.
HTTP Error 404 - Not Found.
Version Information: ASP.NET Development Server 8.0.0.0

Figure 21 problem occurred

4.4 System Evaluation

As this project is aimed to create a web based content management system offering the functionality required for the design of paper handling aspects of conference websites. The outcomes should allow different interactive operations for the authors and reviewers.

Following the analysis of user (authors and reviewers) requirements stated in the Chapter 1, it was apparent that a friendly user interface, navigate with ease, and data security were some of the key issues which need to be taken into account seriously for this CMS. Specific functionality required by the authors or reviewers such as uploading the research paper or facilities for accessing the papers and submitting comments need to be met.

According to these requirements, a web based content management system for conference paper handling was developed. The system consists of ASP.NET web based application and the database using Microsoft Access. Both authors and reviewers would be provided with userID and password for the security reason. Based on the login details, the CMS system recognizes the user role and direct the relevant page to the user. For example, the Conference Center Page was created to meet the requirements required by the main users. It consists of Author Center where authors can upload research files and Reviewer Center where reviewers have the facilities for accessing papers and uploading comments.

Following the test it can be included that the majorities of objectives were met. However, it still had been considered that many improvements could be made to the system in the future, and these future developments well be explained later in the next chapter.

5. Conclusion & Future Development

This chapter makes a conclusion about this project. It covers all the core content that has been mentioned in the previous chapters to establish whether the aims and objectives of this project have been achieved or not.

5.1 Conclusion

In this project, the aim of this project was to develop a web based content management system offering the functionality required for the design of paper handling aspects of conference websites. The outcomes should allow the authors to upload the research files and reviewers' facilities for accessing papers and uploading comments. The majority of requirements required by the users were met by implementing the Conference Center Page in the sytem. It consists of Author Center and Reviewer Center which are used to offer the functionality required by the authors and reviewers respectively.

The process of project development was based on Waterfall Model, which is a classic System Development Life Cycle model explained in the literature research section. And the scenario of this project was met by means of using ASP.NET web technology based on VB.NET programming language within the Integrated Development Environment Visual Studio 2005 from Microsoft. Also, all of these were tested after implementation stage by means of Alpha tesing methodology using server side technology such as IIS.

To make a conclusion for this project, it can be said that the system has been developed near enough to its original specification. The majority of functionality required are met even if there were still a number of addition can be made to this system in the future.

5.2 Future Development

It has been identified following recommendations can be proposed for further development to improve the current system if more time was given. Which are:

- There may perhaps be a Personal Messaging Service implemented in the system which is used to allow the direct interactive communications between the authors and the reviewers.

- For the authors, paper status tracking function should be taken into account. For example, a the research paper submission information in tables can be presented for quick reference. Authors can track whether the paper is accepted or not by the conference committee here.

- Keeping track of research paper submissions is useful for the authors,being able to follow review the paper is vital for the reviewers as well. For this reason, a status property can be added to the reviews in the system, which reflects what the reviewer has done.
- Multi-user authoring. The CMS will have many simultaneous users. Record locking feature is the technique of preventing simultaneous access to data in a database to prevent inconsistent results and to ensure that clashing changes are prevented.

- Another aspect of development that has been considered is a hit counter. There will be statistics for most-read paper over a certain period of time and a latest paper list. It would be interesting to know how many people actually viewed the research paper. This is interesting for the author to find out how popular his conference paper is. It can also be interesting to your visitors, as it might give an indication whether the content item is worth reading. The next walkthrough shows you how to implement the hit counter.

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APPENDICES

Appendix A Gantt Chart

					October			November				December					January				February				March					April	
	TASK	Start	Finish	Time	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18	25	3	10	17	24	31	7	14
	System Analysis	M-D-Y	M-D-Y	Days																											
A	Project Title Definition	10/16/07	10/18/07	2																											
B	Functional Requirement Specification	10/20/07	10/30/07	10																											
C	Feasibility Study	10/19/07	10/30/07	11																											
	System Design																														
E	Content Flow Chart	11/2/07	11/7/07	5																											
F	Design Of Interface	11/10/07	11/25/07	15																											
G	Database Design	11/28/07	12/15/07	18																											
	System Implementation																														
H	Learning Visual Studio 2005	12/10/07	1/1/08	21																											
I	Web Site Implementation.	12/20/07	1/10/08	21																											
J	Database Implementation	1/12/08	2/3/08	21																											
K	Connection to Database	2/5/08	2/20/08	15																											
	System Testing																														
L	Navigation Test	2/21/08	2/23/08	2																											
M	Browser Test	2/25/07	2/27/08	2																											
N	**System Evaluation**	3/1/08	3/8/08	7																											
O	**Report Writing**	3/3/08	4/6/08	42																											

Appendix B Login Page VB Code

```
Imports System.Data.SqlClient
Imports System.Net

Partial Class _Default
    Inherits System.Web.UI.Page

    Protected Sub Login1_Authenticate(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.AuthenticateEventArgs) Handles Login1.Authenticate


        Dim myConn As New Data.OleDb.OleDbConnection
        myConn.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb"

        myConn.Open()

        Dim Name As String = Trim(Login1.UserName)
        Dim Password As String = Trim(Login1.Password)
        Dim myCmdStr As String
        myCmdStr = "SELECT reg_name,reg_pass FROM  tab_user where reg_name =" + "'" +
Name + "'" + _
                   " and reg_pass= " + "'" + Password + "'"

        Dim myCmd As Data.OleDb.OleDbCommand = New
Data.OleDb.OleDbCommand(myCmdStr, myConn)
        Dim reader As Data.OleDb.OleDbDataReader = myCmd.ExecuteReader()

        If reader.Read() Then
            Session("username") = reader("reg_name")
            Response.Redirect("homepage.aspx")

        Else
            Response.Write("<script>alert('You login attempt was not succssful.Please try again.');
</script>")
        End If

        reader.Close()
        myConn.Close()
        reader.Close()
        myConn.Close()

    End Sub
End Class
```

Appendix C Author Center Page VB Code

```
Imports System
Imports System.Data
Imports System.Configuration
Imports System.Collections
Imports System.Web
Imports System.Web.Security
Imports System.Web.UI
Imports System.Web.UI.WebControls
Imports System.Web.UI.WebControls.WebParts
Imports System.Web.UI.HtmlControls
Partial Class uploadfile
    Inherits System.Web.UI.Page

    Protected Sub Button1_Click(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Button1.Click
        Dim myConn As New Data.OleDb.OleDbConnection
        myConn.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb"

        myConn.Open()

        Dim comm As OleDb.OleDbCommand
        Dim strtitle As String = Trim(title.Text)
        Dim strauthor As String = Trim(author.Text)
        Dim strabstract As String = Trim(abstract.Text)
        Dim strkeywords As String = Trim(keywords.Text)
        Dim strarea As String = Trim(area.Text)
        Dim strfile As String = Trim(FileUpload1.FileName)

        Dim strinsql As String

        strinsql = "insert into tab_paper (title,author,abstract,keywords,area,filepath,up_user)
values ('" + strtitle + strauthor + "','" + strabstract + "','" + strkeywords + "','" + strtitle + "','" +
strarea + "','" + strfile + "','" + Session("username") + "')"

        comm = New OleDb.OleDbCommand(strinsql, myConn)
        comm.CommandType = CommandType.Text
        'comm.CommandType = CommandType.Text
        comm.CommandText = strinsql
        comm.ExecuteNonQuery()
        myConn.Close()
        SaveImages()
        Response.Write("<script>alert('upload file Successful!');</script>")
    End Sub
    Private Function SaveImages() As System.Boolean

        '//loop through the files uploaded

        Dim _files As System.Web.HttpFileCollection =
System.Web.HttpContext.Current.Request.Files

        '//Message to the user
        Dim _message As New System.Text.StringBuilder("Files Uploaded:<br>")
        Dim _iFile As System.Int32
        Try

            For _iFile = 0 To _files.Count - 1
```

```
            '// Check to make sure the uploaded file is a pdf file

            Dim _postedFile As System.Web.HttpPostedFile = _files(_iFile)
            Dim _fileName, _fileExtension As System.String

            _fileName = Session("username") + System.IO.Path.GetFileName( _
            _postedFile.FileName)

            _fileExtension = System.IO.Path.GetExtension( _
             _fileName)

            If (_fileExtension = ".pdf") Then


               '//Save File to the proper directory
               _postedFile.SaveAs( _
                System.Web.HttpContext.Current.Request.MapPath( _
                "files/") + _fileName)
               _message.Append(_fileName + "<BR>")


            ElseIf (_fileExtension = ".doc") Then

               '//Save File to the proper directory
               _postedFile.SaveAs( _
                System.Web.HttpContext.Current.Request.MapPath( _
                "doc/") + _fileName)
               _message.Append(_fileName + "<BR>")


            Else

               _message.Append(_fileName & " <font color=""red"">failed!! Only .pdf and .doc
files are allowed!</font> <BR>")

            End If

         Next

         Label3.Text = " <font color=""red"">" + _message.ToString() + "</font> <BR>"
         Return True



      Catch Ex As System.Exception


         Label3.Text = " <font color=""red"">" + Ex.Message + "</font> <BR>"
         Return False

      End Try

   End Function

   Protected Sub SqlDataSource1_Selecting(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.SqlDataSourceSelectingEventArgs) Handles
SqlDataSource1.Selecting

   End Sub
End Class
```

Appendix D Reviewer Center Page VB Code

```
Imports System.Data.OleDb
Imports System.Data

Partial Class Paper_Review
    Inherits System.Web.UI.Page

    Protected Sub Page_Load(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Me.Load

    End Sub

    Protected Sub Button1_Click(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Button1.Click
        Dim strsql As String
        Dim selectedcodes As String = Request("checkbox1")
        Dim selectpaper() As String
        Dim i As Integer
        Dim str As String
        Dim myConn As New Data.OleDb.OleDbConnection
        myConn.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb"
        myConn.Open()
        Dim comm As Data.OleDb.OleDbCommand
        If selectedcodes <> "" Then
            selectpaper = selectedcodes.Split(",")
            For i = 0 To selectpaper.Length - 1
                strsql = "update tab_paper set reviewflag='" + DropDownList1.SelectedValue + "',
reasons='" + TextBox1.Text + "' ,comments='" + TextBox2.Text + "' ,reviewuser='" +
Session("username") + "' where id=" + selectpaper(i).ToString()


                comm = New Data.OleDb.OleDbCommand(strsql, myConn)
                comm.CommandType = CommandType.Text
                'comm.CommandType = CommandType.Text
                comm.CommandText = strsql
                comm.ExecuteNonQuery()
            Next
        End If
        SqlDataSource1.SelectCommand = "SELECT * FROM [tab_paper] WHERE
([Reviewflag] = 'wait')"
        SqlDataSource1.DataBind()


    End Sub

    Protected Sub Button2_Click(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Button2.Click
        SqlDataSource1.SelectCommand = "SELECT * FROM [tab_paper] WHERE
([Reviewflag] = 'wait') and (title like '%" + TextBox1.Text + "%' or keywords like '%" +
TextBox1.Text + "%' or abstract like '%" + TextBox1.Text + "%' ) and author like '%" +
TextBox2.Text + "%'"
        SqlDataSource1.DataBind()
    End Sub

    Protected Sub GridView1_SelectedIndexChanged(ByVal sender As Object, ByVal e As
System.EventArgs) Handles GridView1.SelectedIndexChanged

    End Sub
```

```
    Protected Sub SqlDataSource1_Selecting(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.SqlDataSourceSelectingEventArgs) Handles
SqlDataSource1.Selecting

    End Sub
End Class
```

Appendix E Register Page VB Code

```
Imports System
Imports System.Data
Imports System.Configuration
Imports System.Collections
Imports System.Web
Imports System.Web.Security
Imports System.Web.UI
Imports System.Web.UI.WebControls
Imports System.Web.UI.WebControls.WebParts
Imports System.Web.UI.HtmlControls
Partial Class _Default
    Inherits System.Web.UI.Page



    Protected Sub Button1_Click(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Button1.Click
        Dim myConn As New Data.OleDb.OleDbConnection
        myConn.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb"

        myConn.Open()

        Dim comm As OleDb.OleDbCommand
        Dim comm2 As OleDb.OleDbCommand
        Dim tables As OleDb.OleDbDataReader
        Dim strsql As String
        Dim strtitle As String = Trim(title.Text)
        Dim strlastname As String = Trim(lastname.Text)
        Dim strfirstname As String = Trim(firstname.Text)
        Dim stremail As String = Trim(email.Text)
        Dim strcountry As String = Trim(country.Text)
        Dim struserrole As String = Trim(userrole.Text)
        Dim strorganization As String = Trim(organization.Text)
        Dim strpassword As String = Trim(pas.Text)
        Dim strconfirpas As String = Trim(confirmpas.Text)
        Dim strinsql As String
        If strpassword = strconfirpas Then
            lbname.Visible = False

            strsql = "select reg_name,reg_pass From tab_user where reg_name='" + strlastname
+ strfirstname + "'"
            comm2 = New OleDb.OleDbCommand(strsql, myConn)
            comm2.CommandType = CommandType.Text
            tables = comm2.ExecuteReader()
            If tables.HasRows = True Then


                lbname.Visible = True
                Return
            Else

                strinsql = "insert into tab_user
(reg_name,reg_pass,email,title,country,userrole,organization) values ('" + strlastname +
strfirstname + "','" + strpassword + "','" + stremail + "','" + strtitle + "','" + strcountry + "','" +
struserrole + "','" + strorganization + "')"

                comm = New OleDb.OleDbCommand(strinsql, myConn)
                comm.CommandType = CommandType.Text
```

```
            'comm.CommandType = CommandType.Text
            comm.CommandText = strinsql



            comm.ExecuteNonQuery()

            Response.Write("<script>alert('Registration
Successful!');window.location='default.aspx'</script>")
        End If
    Else
        Response.Write("<script>alert('Password do no match.Please re-enter all password
data!');history.back(-1)'</script>")

    End If


    myConn.Close()
  End Sub

  Protected Sub SqlDataSource1_Selecting(ByVal sender As Object, ByVal e As
System.Web.UI.WebControls.SqlDataSourceSelectingEventArgs) Handles
SqlDataSource1.Selecting

  End Sub

  Protected Sub country_SelectedIndexChanged(ByVal sender As Object, ByVal e As
System.EventArgs) Handles country.SelectedIndexChanged

  End Sub

  Protected Sub userrole_SelectedIndexChanged(ByVal sender As Object, ByVal e As
System.EventArgs) Handles userrole.SelectedIndexChanged

  End Sub
End Class
```

Appendix F Feedback Page VB Code

```
Imports System
Imports System.Data
Imports System.Configuration
Imports System.Collections
Imports System.Web
Imports System.Web.Security
Imports System.Web.UI
Imports System.Web.UI.WebControls
Imports System.Web.UI.WebControls.WebParts
Imports System.Web.UI.HtmlControls
Partial Class bbs
    Inherits System.Web.UI.Page

    Protected Sub Button1_Click(ByVal sender As Object, ByVal e As System.EventArgs)
Handles Button1.Click
        Dim myConn As New Data.OleDb.OleDbConnection
        myConn.ConnectionString = "Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb"

        myConn.Open()

        Dim comm As OleDb.OleDbCommand
        Dim strname As String = Trim(name.Text)
        Dim stremail As String = Trim(email.Text)
        Dim strtitle As String = Trim(title.Text)
        Dim strcontent As String = Trim(content.Text)
        Dim strip As String = Request.UserHostAddress.ToString()
        Dim strinsql As String

        strinsql = "insert into tab_feedback (username,email,title,content,ip) values ('" + strname
+ "','" + stremail + "','" + strtitle + "','" + strcontent + "','" + strip + "')"

        comm = New OleDb.OleDbCommand(strinsql, myConn)
        comm.CommandType = CommandType.Text
        'comm.CommandType = CommandType.Text
        comm.CommandText = strinsql
        comm.ExecuteNonQuery()
        myConn.Close()

        Response.Write("<script>alert('Send Successful!');</script>")

    End Sub
End Class
```

Appendix G Web.Config File Source Code

```
<?xml version="1.0"?>
<configuration>
	<appSettings/>
	<connectionStrings>
		<remove name="LocalSqlServer"/>
		<add name="CMSConnStr"
connectionString="Provider=Microsoft.Jet.OLEDB.4.0;Data
Source=|DataDirectory|\CMS.mdb" providerName="System.Data.OleDb"/>
	</connectionStrings>
	<system.web>
		<!--

    -->
		<compilation debug="true" strict="false" explicit="true">
			<assemblies>
				<add assembly="System.Design, Version=2.0.0.0,
Culture=neutral, PublicKeyToken=B03F5F7F11D50A3A"/></assemblies></compilation>
		<pages>
			<namespaces>
				<clear/>
				<add namespace="System"/>
				<add namespace="System.Collections"/>
				<add namespace="System.Collections.Specialized"/>
				<add namespace="System.Configuration"/>
				<add namespace="System.Text"/>
				<add namespace="System.Text.RegularExpressions"/>
				<add namespace="System.Web"/>
				<add namespace="System.Web.Caching"/>
				<add namespace="System.Web.SessionState"/>
				<add namespace="System.Web.Security"/>
				<add namespace="System.Web.Profile"/>
				<add namespace="System.Web.UI"/>
				<add namespace="System.Web.UI.WebControls"/>
				<add
namespace="System.Web.UI.WebControls.WebParts"/>
				<add namespace="System.Web.UI.HtmlControls"/>
			</namespaces>
		</pages>

		<authentication mode="Windows"/>
		<!--
    <customErrors mode="RemoteOnly" defaultRedirect="GenericErrorPage.htm">
      <error statusCode="403" redirect="NoAccess.htm" />
      <error statusCode="404" redirect="FileNotFound.htm" />
    </customErrors>
    -->
	    </system.web>
</configuration>
```

Appendix H Other Webpages for the 27th Chinese Control Conference website

The 27th
Chinese Control Conference
Chinese Association Automation
Technical Committee on Control, CAA
Kunming University of Science and Technology
Home
Call for Paper
Conference Organization
Paper Submission
Contact Us
Call for Papers
The Chinese Control Conference (CCC) is an annual international conference organized by Tech. Com. on Control Theory, CAA. It provides a forum for scientists and engineers over the world to present their new theoretical results and techniques in the field of systems and control. The conference consists of plenary talks, panel discussions, oral and poster sessions etc. for academic exchanges. The conference proceedings have been selected for coverage in ISI proceedings/ISTP (Index to Scientific and Technical Proceedings) since 2005 and included in the IEEE CPP (Conference Publications Program) since 2006. The 27th CCC is organized by the Kunming University of Science and Technology and will be held in Kunming, which is located in the west of China and is known as the "Spring City". Taking this opportunity we sincerely welcome our colleagues worldwide to join us for this conference. Topics of interests are in the broad areas of systems and control, including but not limited to:
S1 System Theory and Control Theory
S2 Nonlinear System and Control
S3 Complexity and Complex System Theory
S4 Distributed Parameter Systems
S5 Hybrid Systems and DEDS
S6 Large Scale Systems
S7 Stochastic Systems

Figure 22 Call for Paper Page I

Figure 23 Conference Organization Page I

Appendix I Other Webpages for the 7th World Congress on Intelligent Control and Automation

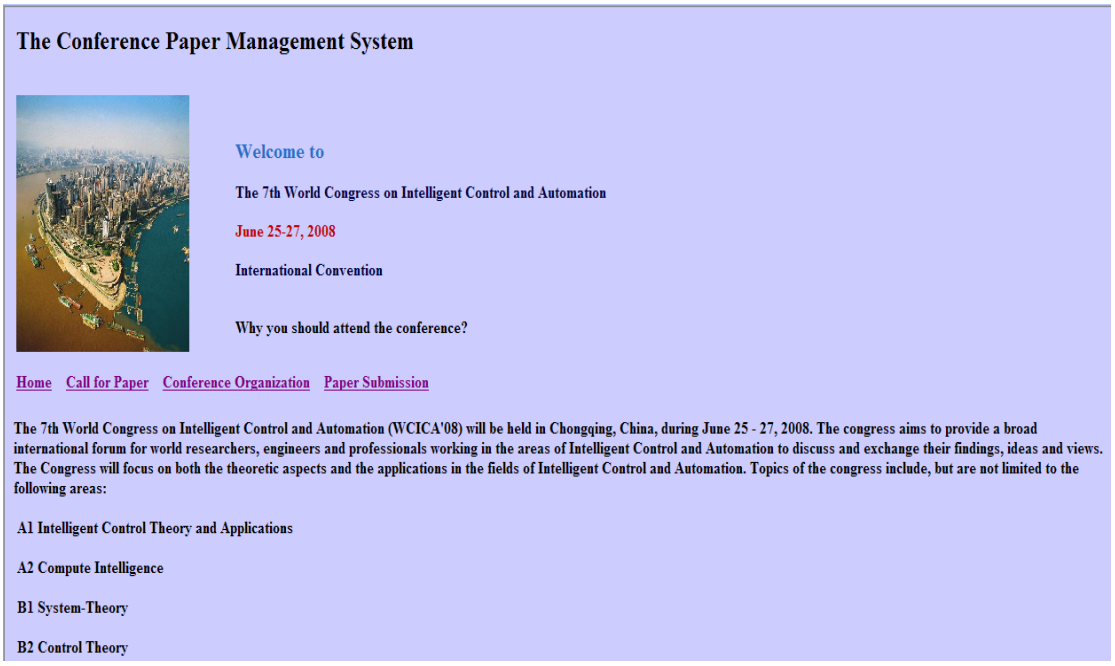
The Conference Paper Management System
Welcome to
The 7th World Congress on Intelligent Control and Automation
June 25-27, 2008
International Convention
Why you should attend the conference?
Home Call for Paper Conference Organization Paper Submission
The 7th World Congress on Intelligent Control and Automation (WCICA'08) will be held in Chongqing, China, during June 25 - 27, 2008. The congress aims to provide a broad international forum for world researchers, engineers and professionals working in the areas of Intelligent Control and Automation to discuss and exchange their findings, ideas and views. The Congress will focus on both the theoretic aspects and the applications in the fields of Intelligent Control and Automation. Topics of the congress include, but are not limited to the following areas:
A1 Intelligent Control Theory and Applications
A2 Compute Intelligence
B1 System-Theory
B2 Control Theory

Figure 24 Call for Paper Page II

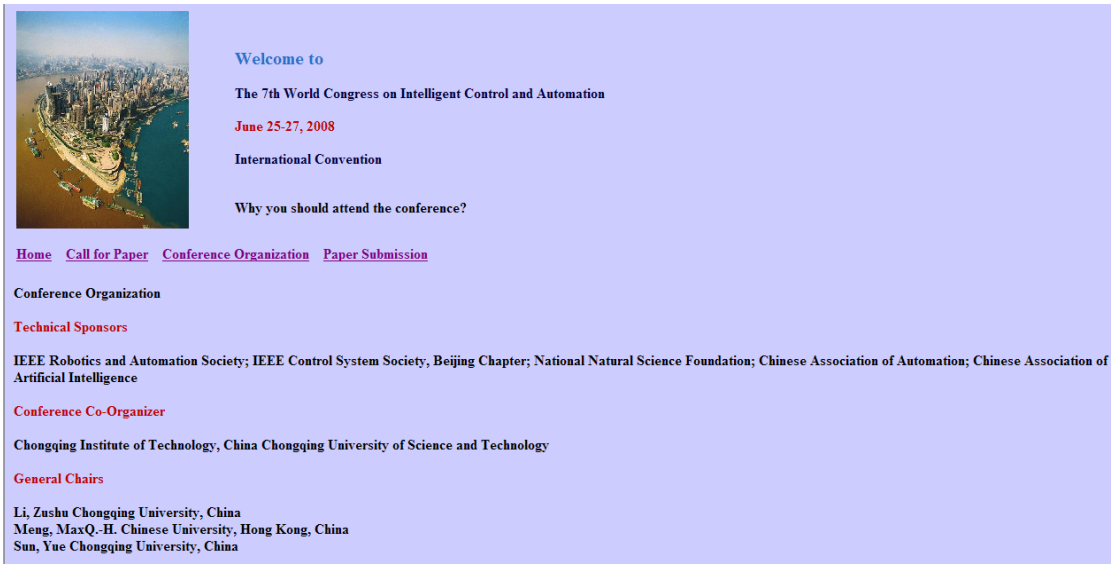
Welcome to
The 7th World Congress on Intelligent Control and Automation
June 25-27, 2008
International Convention
Why you should attend the conference?
Home Call for Paper Conference Organization Paper Submission
Conference Organization
Technical Sponsors
IEEE Robotics and Automation Society; IEEE Control System Society, Beijing Chapter; National Natural Science Foundation; Chinese Association of Automation; Chinese Association of Artificial Intelligence
Conference Co-Organizer
Chongqing Institute of Technology, China Chongqing University of Science and Technology
General Chairs
Li, Zushu Chongqing University, China
Meng, MaxQ.-H. Chinese University, Hong Kong, China
Sun, Yue Chongqing University, China

Figure 25 Conference Organization Page II